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THE PHILOSOPHICAL REVIEW

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November, 1936

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THE
PHILOSOPHICAL REVIEW

THE RECEPTACLE

THE notion of the receptacle as presented in the *Timæus* is of fundamental importance in the philosophy of Plato. And yet it receives no mention in any of his works outside the *Timæus*.[1] The reader may well ask to what degree the account in the *Timæus* should be taken seriously; and this question is all the more important as, in the present essay, the *Timæus* will be largely drawn upon in the discussion of God, the soul, the good, as well as of the receptacle.

Now an imporant group of Platonic scholars have viewed the *Timæus* as a figurative account, an allegory not to be taken *au pied de la lettre*. The evidence comes from Plato himself in the *Timæus*, and is copious. In *29b-d* he says there is a kinship between knowledge and its object. The *Timæus* is an exposition of the world of generation; as generation is an image of being, so an account of it is only an image of the truth. A doctrine concerning becoming partakes, itself, of flux; it is not final, but has to give way to other doctrines. All such doctrines are infected with probability; their status is that of myths (*69b*). The exposition in the *Timæus* lacks experimental demonstration (βάσανος, *68d*); therefore it is not fixed, and is without the invincible quality possessed by truly rational knowledge (*29b*). Plato speaks of the study of probabilities as a relaxation for the philosopher, from which he derives innocent amusement, just as in the *Phædrus* (*276e*) he describes the writing of books as a pastime for tired old men.

But to grant that the cosmological account in the *Timæus* is a myth does not solve the matter. What is a myth? The question is not one of facts but of the interpretation of facts. What is the status of probability in knowledge? Is a likely story just a fantasy,

[1] Except possibly in *Cratylus* 412*d*.

or is it a definite way of conveying the truth? Thus the whole question hinges on the place of probability and of myth in the scheme of valid thought.

Absolutely true and abiding knowledge is found only in dialectic; this is knowledge from first principles, and finally from the idea of the good. But such knowledge is to be had only by the Gods and their friends among men to whom they choose to reveal it (53*d*). Presumably it is not to be achieved by unaided human effort; or, if it is, it may be achieved by rare spirits at rare and fleeting moments. Plato makes much of the difference between divine and human nature, and of the limitations of the latter. "Whereas God is sufficiently wise and powerful to blend the many into one, and to dissolve again the one into the many, there exists not now, nor ever will exist hereafter, a child of man sufficient for these tasks" (68*d*). And again, "We should be content to furnish accounts that are inferior to none in likelihood, remembering that both I who speak and you who judge are but human creatures, so that it becomes us to accept the likely account of these matters and *forbear to search beyond it*" (39*d*).

In short, inability to attain the level of dialectic is all but universal among the children of man. But, if this is so, the account in the *Timæus*, in its character as probable, is no better but no worse than any other portion of Plato's philosophy. After all, this is a relative matter; if the cosmology of the *Timæus* is probable in the same sense as is the doctrine of the immortality of the soul, we have made the point that the former should be taken seriously. And as we propose to show almost immediately, the theories both of ideas and of the soul lack final demonstration; they are only hypotheses. Man's failure to attain absolute knowledge does not, for Plato, imply that we should forsake the quest. Man should frame reasonable hypotheses, and this is a venture worth making (*Phædo* 114*a*). As is familiar to all students, Plato has the category of the second best, which he uses in all kinds of circumstance. Failing the best, we should avail ourselves of the second best. Such are books as compared to the spoken word; such is the spoken word as compared to the unspoken word. Such are written laws as contrasted with the rule of reason. They are second best because they involve a compromise with the limitations of human nature; and this com-

promise Plato was willing to make. In fact, it is an inevitable compromise so long as the soul is in the body. And this is true of many, if not all, of the Platonic theories; they represent a second best. All speech is infected with the element of accident, since we ourselves are infected with it (*Timæus* 34*c*). Take the theory of the good. "Now I would gladly be the pupil of anyone who would teach me the nature of such a cause [*i.e.*, the good]; but since that was denied me . . ., do you wish me, Cebes, to give you an account of the way in which I conducted my second voyage, in quest of the cause?" (*Phædo* 99*c*). Thus the theory of the good, and of the ideas, is a second voyage. Plato speaks of the hypothesis of ideas as plain and foolish (ἄτεχνος, εὐήθης, *Phædo* 100*d*), just as he describes his cosmological account in the *Timæus* as unusual and novel (ἄηθες, ἄτοπον 48*d*). The theory of ideas may be demonstrated only within the limits which human nature prescribes (*Phædo* 107*a*). Neither the account in the *Phædo* nor that in the *Timæus* possesses complete certainty.[2] They are both hypotheses.

And this is our main contention: For Plato, thought does not divide itself into true and false, or simply into completely certain, and completely uncertain thought; there are degrees of knowledge, of certainty, of clarity. To say that the cosmological account of the *Timæus* is not dialectical, is not to damn it; it is to assign to it a certain definite rating as knowledge. We suggest that it belongs to the third segment of the divided line, which is understanding (*dianoia*). In the third level, propositions are believed which are not demonstrated from first principles (*Republic* 511*a*). So is the account in the *Timæus* stated to leave out "the higher causes" (53*d*). But though it is not a demonstration, it is knowledge of a certain degree. In the level of understanding—for example, in mathematics—one only *dreams* about being. So the cosmological account of the *Timæus* is a myth. Now what a myth is can be understood from a study of what mathematical thought is according to Plato. "They summon to their aid visible forms, and discourse about them, though their thoughts are busy not with these forms, but with their originals, and though they discourse not with a view to the particular square and diameter, which they draw, but with a view to the absolute square and the absolute diameter, and so on.

[2] *Cf.* that the forms are indissoluble is *likely*. *Phædo* 78*c*.

For while they employ by way of images those figures and diagrams aforesaid, . . . they are really endeavoring to behold those abstractions which a person can only see with the eye of thought" (*Rep.* 510*d*). This passage provides an account of the function of symbolism in thought. Symbolism consists in the use of a particular in order to apprehend a universal. And this is the sense in which the cosmology of the *Timæus* is a myth. It is a treatment of eternal things by the symbolism of the passing. The discussion, clothed in imagery, is really about the Good, God, the Receptacle, the Mathematical Relations. In Plato's words, "I will essay to give as likely an exposition as any other—nay more so—regarding both particular things and the *totality of things from the very beginning*" (*Tim.* 48*d*). And earlier he speaks of his exposition as relating to the gods and the generation of the universe (29*c*). Thus it is an account not of the passing primarily; it is about the timeless through the symbolism of the temporal. And as such, it has equal validity with mathematical thought.

Of course, the mere failure of an exposition to reach dialectical certainty is not by itself a reason for putting it into the rank of *dianoia*. Such an exposition may have the lower rating of *doxa*. The question is whether the likely story of the *Timæus* belongs to the third or to the second level of knowledge. Plato himself is not clear in his own mind on this matter. When he speaks of his account as being infected with the accidental, as being inconsistent (29*c*), he seems to imply that it is opinion. In other passages, however, he speaks of his account as having the greatest probability (48*d*).[3] Here probability is not the negation of proof; it has its own type of rigor. It is a form of demonstration (*apodeixis*, 40*e*). Plato distinctly says that he is proceeding according to a method which combines the probable with the necessary (*Tim.* 53*d*); and later he refers to the true account and the probable (56*ab*). In brief, probability of this sort is a type of proof, wherein a hypothesis is validated; with this proviso that its validation is by reference not to first principles, but to phenomena. ("Proceeding not to a first principle but *epi teleuten*", *Rep.* 510 *b*). And whereas Plato aims in the *Timæus* to give an exposition provided with just

[3] Compare with *Phædo* 100*a*, where he speaks of the hypothesis of ideas as the *strongest* one.

this degree of rigorous demonstration, he suspects that he falls short of it, and thus sometimes he refers to his account as methodical, and at other times as casual. Thus he does not have the same degree of conviction about the cosmological account as he has about the hypothesis of a realm of ideas—though the latter is no more than a hypothesis, he believes that it will never fail (*Phædo* 100*d*). We will conclude then that the account in the *Timæus* is somewhere between opinion and understanding; that it is an instance of knowledge of the 'second best' kind; that, on account of human limitations, the second best sort is all but universal; that for these reasons the account in the *Timæus* falls short, in respect of certainty, of some of the Platonic doctrines, and is coördinate with a majority of them.

Plato introduces the notion of the receptacle by way of a critique of the Ionian philosophers and the atomists. He is looking for a creative factor;[4] now the preceding schools had put forth the four elements—earth, fire, air, and water—as the explanation of the world of generation. Plato's point is that this explanation does not go far enough and therefore is not truly metaphysical. The four elements are not really "elements" (στοιχεῖα); they are not ultimate; they, themselves, belong to the world of generation. They come and go, each passing into each. Thus they lack self-identity, being indistinguishable from each other. We cannot call them 'this' and 'that' (49*d*). They cannot be even designated, for they run away while being designated. But a true being remains identical with itself, and therefore undergoes no change. In sum, the four elements do not really exist; they are only fluctuating *modes* of being. The Ionian School has mistaken effects for causes; we must abandon their solution, or rather use their ending-point as a point of departure and thence proceed to discover the truly ultimate constituents of the real. If the so-called elements are determinations of being, what is it they are determinations of?

And so the notion of the receptacle comes on the scene. The receptacle is the enduring thing underlying the transformations of the elements into each other. The receptacle is an hypothesis to

[4] On my use of this phrase, see my article on "The Fundamental Conceptions of Plato's Metaphysics", *Journal of Philosophy*, Oct. 10, 1935.

explain data of experience—more specifically, the facts of change. We have here an instance of Plato's method of validating a notion by relating it to the world of sensible things. On the other hand, the receptacle, although presupposed by experience, is never given in experience ("apprehended without sensation", 52*b*). It is not a datum, and is known as in a dream.

The receptacle, as it is described by Plato, has the distinguishing marks of a creative factor. It is invisible and belongs to the intelligible world (though in a fashion not to be understood, 51*a*). While things pass into and out of it, the receptacle itself remains unaffected, never departing from its own nature. It is changeless and timeless. Finally, it is the cause of the world of generation.

As changelessness and self-identity are the marks of the realm of forms, one might raise the question whether the receptacle may not be a form. It would clearly be wrong to draw such an inference. The receptacle is like the realm of forms in that both are contrasted with the world of created things, in their character as creative factors. But there the similarity ends. They, each, belong to different grades in the hierarchy of the creative factors.

Or shall we say that the receptacle is Newtonian matter? The receptacle is called space and contains motion; as the basis of the sensible, bodily aspect of the world, it might be material. In a narrow sense, it could be defined as extended matter in motion. And it is a passive cause; it has the property of inertia. Finally, it acts by necessity, not by teleology.

Such an attempted interpretation of the receptacle would be wholly superficial. Physical matter is definite, divisible, organized, operating according to strict law. Physical matter is a creature, not a creative factor; it arises from the ingression of the Limit into the Unlimited. Both physical space and physical motion are relatively determinate, bearing the impress of the forms. The receptacle is wholly indeterminate; therefore it can be identified neither with physical space, which is a definite pattern of positions, nor with motion, which is a measurable phenomenon. It must be rather construed as the potency of matter, and of space, and of physical motion; as that which, when impressed by the patterns, becomes matter, space, motion. Finally, matter is a physical and empirical concept; the receptacle is a metaphysical concept.

What is, then, the receptacle? In answering this question, our method will be to offer successive approximations to the answer.

Plato notes that the world of generation is not selfcomplete. It cannot function as a logical subject in a sentence; it is a qualification of something else, or rather of two things. On the one hand, it is relative to a "wherefrom" (ὅθεν) and, on the other, to a "wherein" (ἐν ᾧ 50*d*). The first is the timeless pattern, of which the creature is a copy; the second is the timeless receptacle, wherein the world is born and passes away. Thus the creature points to a superjicient factor, and to a subjicient factor; the actual world is the enactment *somewhere* of the *forms.*

I. From the start, a possible confusion must be removed. The receptacle is not stuff or matter. It is true that Plato compares the receptacle to the metal gold, from which gold figures are made, and to the liquid ointments used in the production of perfumes; and it is true that both the gold and the liquids are materials used in a variety of products. But we must remember that this is an analogy, and distinguish the relevant from the irrelevant features of the analogy. What Plato is concerned with in the relation of the gold and liquids to their products respectively are (*a*) that there is an enduring identity in what is changing and (*b*) that there is something formless and yet capable of receiving all forms. Now the character of enduringness or eternality pertains to all creative factors; the joint characters of formlessness and receptivity are those of a creative factor which, in this particular instance, is a determinable. Now space, without being stuff, possesses these characters; it is formless and can receive any form; that is, it may be divided into any kind of segment; it may be impressed with any geometrical figure. Plato's receptacle is a subjicient factor for concrete things, which need not be stuff, need not, in fact, be anything.

The receptacle is the *container of events;* it is itself nothing, a void in which events thrive and perish. Now the container (δεξαμενή) is further identified as space, χώρα. Plato speaks of space as though it were a basket into which events are thrown, yet, as it were, a basket without bottom and without sides. At other times, he speaks of it as a principle of position. "We say it is

somehow necessary that all being should be in some place and occupy some space, and that whatever is neither in earth nor anywhere in heaven is nothing" (*Tim.* 52*c*).

II. We propose the hypothesis that the receptacle is not simply space, but *space-time*. Though there are strong objections to such a construction, which immediately occur to one, the writer would like to defend this hypothesis without, however, pressing it on the reader. But, first, what are the objections? The receptacle is timeless, and so cannot be the principle of time. The answer to the objection is that there is no contradiction here; only a paradox. Time itself does not change, and does not occur; time is timeless. A more basic objection issues from a consideration of Plato's explicit doctrine of time in the *Timæus*. Time is described as a creature, contrived simultaneously with the creation of Heaven (37*e*); it is measured motion, and therefore must belong to the mixed class. Space, on the other hand, is a creative factor, logically prior to time.

This interpretation of time as contrasted with space will not stand. The receptacle is not space, if by space we mean a pattern of definite positions. Definiteness is a product of the impression of the forms upon the receptacle. The receptacle can only be the potency of a definite space, in which definite things occupy definite positions; as such, it is indefinite extendedness. Thus actual space is a creature, as time is. The considerations in favor of the view that the receptacle is space-time are as follows. Measurable space presupposes an undifferentiated extendedness on which definiteness has been imposed. So does measurable time—regarded as a creature—presuppose a primordial state of affairs on which measure has been impressed. This state of affairs is sheer passage. As we will try to demonstrate below, the receptacle is the principle of wild surging motion—that is, of undirected activity. Thus, in the receptacle, there is undifferentiated or latent time, in the form of indeterminate change which, by the creative intervention of God, is transformed into ordered time.

In support, the reader is referred to the passage (51*a*) in which Plato refers to the receptacle as fitted to receive *frequently*, and *throughout its whole extent*, copies of intelligible things. In this passage there is a double characterization of the receptacle, as an

extensity both temporal and spatial. The receptacle is a potency for time as well as for space. It is the reason why things succeed each other, as well as why they are extended. On this view, it is a spatio-temporal continuum, in which determinate events take place. The events arise from the ingression of forms into space-time.

It would follow that the word, time, is used ambiguously. It may refer either to measurable motion or to undifferentiated flux. In its first sense, time belongs to the mixed class, having been created by God along with the world. In its second sense, time denotes an uncreated, primordial fact; and is a character of the receptacle. In the former rendering it is actual, and in the latter it is latent, time.

The receptacle is the locus of creation, just as God is the energy for creation, and the Good its purpose. And the world of concrete things is nothing more than the relevance of the forms to the receptacle, such that we have not merely 'man' as such, but 'man' at a moment and at a place. Thus the receptacle is the factor of the πολλά, or sheer plurality. Each form is one; there is one form 'man' or 'white'; but each form may be repeated many times and in many places. There are many individual men, either as generated in successive generations through time, or, if at the same time, as occupying different places in space.

We must contrast this type of manyness with intelligible multiplicity. As against Parmenides, Plato maintains that the One is divided into a Many; that, in fact, the One and the Many are necessary forms of thought (*Phileb.* 15*d*). To think is to compare parts within a whole, to analyse a genus into many species. There are many forms, and many genera. Thus multiplicity (as well as unity) is a character of the intelligible world. This is rational multiplicity in the sense that diversity is difference; each distinct entity is a form. Also the variety of forms is referable to the principle of the best; thus the multiplicity is derived from the One. But in the world of generation diversity is sheer plurality, it is repetitive; things multiply themselves for no reason, that is, without reference to any principle of value. The plurality cannot be deduced from any rational ground; it has to be noted by sense-perception; it is a given fact. This plurality is unintelligible in a further sense as well. The forms are things in themselves (αὐτὰ καθ' ἑαυτά), possessing

self-identity. Thus they can be designated and distinguished. But the plurality of things is more like a mob in which individuals merge into each other. Concrete things are relative to a context; they vary when the context varies; thus they have no distinct being. Also the boundaries between things are indefinite; where one thing ends and another begins is not clear. Real plurality implies self-identity in the members of the group, and is to be found in the world of forms. As for concrete things, it is more true to say of them that they are confused and indefinite than that they are many.

We can now draw certain definite conclusions from the preceding considerations.

(*a*) The receptacle is a void; it is not-being. Hence it is not matter or stuff.

(*b*) The receptacle is a determinate void; it is a space-time continuum.

(*c*) The receptacle provides a seat (ἕδρα) for events, and is not defined by them. Plato states that the receptacle existed before the heaven (*i.e.*, the cosmos) was created. Thus space-time is not an abstraction from concrete things; it is presupposed by them; it is a creative factor for events. But such an assertion must be properly safeguarded. Measurable time and space do not exist apart from measurable changes. Similarly, undifferentiated time and space are aspects of a more complex fact which includes undifferentiated change. Thus we can validly say only that the primordial uncreated space-time is prior to the world of definite things.

(*d*) The receptacle is a principle of division. The forms are single, but space-time is divisible. Hence the receptacle accounts for plurality in the world of generation.

(*e*) The receptacle is a principle of relatedness among the many concrete things. The passing events meet and merge in it. It is the common background in the interpassage of things; by virtue of their common relation in the receptacle, the events are members of one family.[5]

(*f*) There is one unique space-time container common to all events (*i.e.*, becomings). This proposition is an immediate conse-

[5] See A. N. Whitehead, *Adventures of Ideas* 240 ff., for an elaboration of this view.

quence of the preceding one. Thus there is only one framework of reference.

III. We must now retrace our steps and embark on a fresh study of the receptacle. What we will proceed to say does not contradict what we have already said; it supplements or rather includes it. The notion of the receptacle is that of *matter of fact*. In explaining the world of generation we point to the realm of forms, which Plato calls the cause of passing things. Yet it is not a sufficient cause; it explains their structure, their order, their nature; it does not explain their existence. We have the fact that such and such a form is embodied in fact; and this is not accounted for by the realm of essence. Now the factor which accounts for the transition from ideality to actuality is the receptacle; it is the principle of existence.

The receptacle as the factor of actuality is conveyed by Plato through the notion of *anagke*—necessity. *Anagke* is the givenness of ideas, their sensible immediacy. Fact is what we find and are compelled to accept. Things are simply so, and there they are. In human nature, *anagke* makes its appearance in what Plato calls the mortal soul. While our rational actions are self-determined, our impulses are compelling. We do not choose our passions; they are given. In the world at large, there is the sheer happeningness of things, not referable to the principle of the best. The receptacle is the aspect of brute fact in things. We have on the one hand rationality, which is the ingredience of the Good in the mixed class; and on the other, brutality, which expresses the ingredience of the receptacle. In brief, the receptacle is the irrational factor in nature.

IV. The receptacle, further, is the factor of *activity*. Plato speaks of the receptacle as filled with powers which are neither similar nor balanced. Motion in the receptacle is random, nonpurposive, irregular, unpredictable. Upon such motion God engrafts order so far as possible, and thus creates the rhythmical movement of the heavenly bodies, of living things, of time itself.

Irregular motion is the factor of passage in things. According to Plato the destiny of all sensible things is to perish; they are

tainted with death. "For everything that has come into being, dissolution is appointed" (*Rep.* 546*a*). Even the philosophic state eventually succumbs to a less admirable polity, and so on until it descends to the level of the tyrannical state. Nothing, no matter how good, can escape destruction, whether it be an internal achievement in the character of man, or an achievement of orderliness in Nature. The conquest of desire by reason is a task which is never completed and never secure; at any moment, the wild surging force of passion may break out and work havoc with our settled dispositions. Thus character is a precarious edifice. The institutions of man are collective habits and virtues; they are mixtures; they arise from the imposition of order upon human relations; these, too, perish inevitably, for they are constructed with a material which is incurably indeterminate. And so, to the extent that he is conscious that there is something rotten in things, Plato seeks to escape from this world. Likewise, the mutual adjustments in the world of things, which today we call laws of nature, will pass, since they have come to be. The receptacle affirms its own indeterminateness against the Demiourgos who impresses it with the forms, and thus perpetually defeats him by the method of passive resistance.

The receptacle is not only the factor of perishing; it is also the principle of birth into novelty. There is the passing away, and the coming-to-be. In the democratic man, in impulse, there is a restlessness, the getting tired with the old, a change to new things, just because they are new. The receptacle shakes off the old forms and moves on to others. It is both destructiveness and creativity—it is the aspect of transience. Plato says that while the copies of the forms come into the receptacle and go out, the receptacle itself is ever-existing and does not admit of destruction (*Tim.* 52*c*). It is eternal creativity issuing into particularized motions, that is, impulses, lives, processes. In this connection we may note Plato's comparison of the receptacle to a mother (50*d*). The receptacle is the principle of life which, on being fertilized by the forms—*i.e.*, when linked to a purpose—gives birth to a living creature. Thus it is the vital force in all things, passive like the female principle, probably unconscious, inexhaustible in its creative power, since, while all creatures come to be and perish, it remains; yet inert, becoming creative when activated by the forms.

In the *Laws* (897 ff.) Plato speaks of an irrational soul which moves wildly and irregularly. It seems reasonable to identify the irrational soul with the wandering cause of the *Timæus* (48*a*). In the *Symposium* (207*e* ff.) Plato describes the soul as ever changing, one in which no ideas, no memories, no knowledge remain; where the old is replaced by the new. This is the empirical self, the soul as issuing from the receptacle. We do not propose to identify the conception of the receptacle with that of the psyche; rather, we maintain that the psyche is a creature of which the receptacle is the subjicient cause, by way of contributing the mortal aspect of the soul, namely, its appetites and passions.

We have said that the receptacle is a space-time container; we have further described it as the principle of actuality and of activity. Here are two pairs of notions which must be correlated with each other; also the members of each pair must be correlated among themselves. We will begin with the second pair, and in our attempted explanation we will go beyond any of Plato's explicit formulations. What is actuality, and what is activity? The concrete world exhibits two phases: one of incompleteness, and one of completeness. In the first place, things are in motion, point to a state beyond themselves, are in a process of attaining completeness. This is their character as becoming. In the second place, things *are;* they are there, they are completed bits of being; this is their character as actualities. There are both the passage and the givenness, the dynamic and the static aspects. The phase of the present as incomplete arises from its relevance to the future; the phase of the present as complete arises from the immanence of the past in the present. Becoming deposits being; being issues into becoming. Thus the concrete thing is both an actual fact and a process. Now the spatio-temporality of the receptacle is an abstraction from its dual character as actuality-activity. Space is the character of things as actual, and time is their character as activities. Furthermore, we have the notions of matter and soul. What Plato calls body—σῶμα—is a mixture of the receptacle as space, with the forms; what he calls psyche arises from the immersion of forms in passage. *Eros* is the character whereby things are not, but are striving to be. Conversely, body is the character of things as simply

there, and as unchanging in their character as fact. Thus it would be wrong to identify the receptacle solely with activity. When Plato compares it to a matrix, or to a determinable which receives the impress of forms, he is not thinking of it as activity. But it would be quite as wrong to identify the receptacle with Aristotle's matter, in so far as the latter is contrasted with motion. Plato's receptacle is a more confused, less determinate, and a richer conception than Aristotle's matter.

IV. We will now attempt to analyse still further the nature of the receptacle in order to find, if possible, the ground for its dual character as space-time. A useful approach would be to note the difference between the receptacle and the realm of forms.

The receptacle is the principle of indeterminateness, as the forms are that of definiteness. Plato attributes to it a fixed nature (*Tim.* 50*c*). But this fixed nature consists in the fact that it remains indeterminate, throughout its relevance to the forms. Correlatively, it is the aptitude for all forms. As its name suggests, it is receptive. Thus it is absolute indetermination and absolute catholicity. These two poles of the receptacle—negative and positive—must be noted separately. Though indeterminate, it is a potency for determination. And again, though determinable, it asserts its nature as indeterminate and rejects its determinations. At the same time, the two poles exist through each other. Because it is devoid of all forms, the receptacle may receive all forms; and because it is catholic (πανδεχές, all-receptive), it really is without form. Its nature as receptive is responsible for the fact that copies of the forms come to be; its nature as indeterminate is responsible for the fact that copies of the forms pass away. Thus the nature of the receptacle is ambivalent; it is both receptive and resistant; and these two aspects are summed up in the notion of the receptacle as pure potentiality.

For example, God is able to persuade the receptacle to receive the patterns. And even antecedently to God's intervention, the receptacle contains *traces* of the forms. The random movement in it sifts like from unlike and brings the like together (53*ab*). There is in it a primordial aptitude for order. Nevertheless there are limitations upon the aptitude. (*a*) The receptacle does not embody the forms adequately. Thus the world of sense is a distorted repre-

sentation of the ideas; ideals are never fully realized; actuality is a frustration of the forms (*e.g.*, equality between two concrete things is never exact equality, *Phædo* 74*c*). (*b*) Consider the following quotation: "Reason persuades necessity to conduct to the best end *the most part* of things coming into existence" (*Tim.* 48*a*). Thus persuasion of the receptacle by God is never wholly successful in any one instance, and not at all successful in some instances. There is both a qualitative and a quantitative limitation. (*c*) Further, no embodiment is permanent. The submission of the receptacle to the forms is like the acceptance of a lover; the relation is not stable. In short, the receptacle is refractory, and the outcome of God's creative action is good only *so far as possible.*

In the reciprocal relation of pattern to receptacle, the first functions as an active cause, the second as a passive one. The receptacle corresponds to absolute patience, to sensitivity; it is a transparent mirror reflecting whatever shapes are held before it. It is pure potentiality. But the problem arises as to how a relation between the two is possible at all. The receptacle is essentially indeterminate and yet partakes of the patterns. Plato says that the relation is obscure; the receptacle participates in them in a most perplexing manner (50*c*, 51*ab*). The relatedness of the two cannot be explained; it is an ultimate fact, the ultimate polarity among the metaphysical factors.

We will now return to the contrast of the receptacle with the forms. The defining feature of the forms is that they remain in themselves, neither receiving anything, nor passing into anything. They are identities; fire is fire, and water is water, timelessly. They are things in themselves (51*c*). The receptacle expresses the opposite property, of being not in itself but in something else; it is the passage to otherness (*cf.* the 'other' as one of the ingredients of the soul, 35*a*). That is exactly the sense in which it is a receptacle; it is receptive to something else, namely, to the totality of forms. These are *for* nothing; they receive nothing. But the receptacle is nothing in itself; essentially, it is being through otherness. The actor or, shall we say, the man with a dramatic temperament has no nature of his own; he is constantly projecting himself into someone else. So the poet projects himself into the scenes

which he depicts (*Ion* 535*b*); the poet is outside himself. Again, the poet is under the spell of the Muse, the rhapsode under the spell of the poet, the audience under the spell of the rhapsode. The enthusiastic man is borne along on other people's ideas; he is a disciple thinking through other people's minds. The actor, the poet, the disciple, the man of sensibility, are beside themselves; they are projected into others. Moreover, they are continually changing the objects of their enthusiasm. The receptacle is catholic. Hence the instability of the creative achievement; to be receptive to all, the receptacle is enduringly receptive to none.

Passage to the other corresponds to what we call *need* or desire. In so far as I need something, my being is not through myself. Plato contrasts (*Phil.* 53*d*) the things that are self-existent with those that are ever in want of something. The good man is self-sufficient, contained in himself, unaffected even by the loss of his closest friends. But the uninstructed man is gnawed by desire; he depends on others and on fortune; his being is outside himself. And, in general, nothing in the world of generation is adequate to itself; all things are ever in search of what is beyond themselves, namely the Good. The *eros*, as the appetition of the Good, is the receptacle exhibiting itself in actual things. The Gods desire nothing. *Eros*, life, desire, quest, movement—these are all types of being through the other.

Thus all things in creation are relative to something else. The receptacle infects creatures with relativity, such that one thing is for and through another, and that through another, and so on *ad infinitum;* so that nothing is *simply*, indeed nothing *is*.

To copy, to participate, to embody—these are all cases of passage to otherness. The concrete thing which is a copy of the forms refers, and is relative to, them. To embody is to enter into something else. The forms embody nothing, since they remain in themselves. Embodiment of forms in the receptacle is the basis of predication in discourse; for predication is the affirmation of the participation of a particular in a universal. Any statement of the type of S is P ('Theætetus sits', *cf. Sophist* 263*a*) is the assertion of passage into otherness. S is affirmed to be something which it is not. Thus the receptacle is the factor of contradictoriness in the world of opinion.

Seeing that the receptacle intrudes no form of its own and that it therefore is wholly patient to the forms, the problem arises why the embodiment of the forms in the receptacle is never wholly successful. The answer is that embodiment is spurious. The actor who enacts the rôle of Macbeth is not Macbeth in the sense in which Macbeth is himself. The relation of the actor to Macbeth is not a genuine participation; he is playing at being Macbeth. Contrast the communion of forms amongst themselves with the participation of a particular in a form. The first is a relation of determination to a determinable, as when we are enabled to affirm that white is a color. The communion of forms is a timeless fact; white is always a color. But when we assert that 'this is white' we are not dealing with a timeless fact; indeed, we are not dealing with any fact at all. The receptacle, it is true, embodies the forms, but it is not a timeless truth that the receptacle is "impressed" with this or that form. White *is* a color; but it is not a fact that 'this' *is* white. The copula in the second phrase is used in a spurious sense; for being is timeless. 'This' is happening to be white. The receptacle is essentially indeterminate; and *any statement to the effect that the receptacle is thus and so would render it determinate.* The participation of white in a color is a being; the participation of 'this' in white is only a pseudo-being, a pseudo-determination. What we have is that whiteness is *happening* to 'this'; 'this' is becoming white. Becoming as distinguished from being expresses the spuriousness in the participation of 'this' in white. So, too, the volatile disciple who projects himself into the ideas of his master does not really embody them. His enthusiasm is only passing, and his reception of the truth a deceptive appearance. In sum, the spuriousness of embodiment arises from the fact that the receptivity of the receptacle is qualified by its indeterminateness.

Before proceeding with the exposition, we must go back and clear up certain obscurities in our treatment. We have said that the receptacle is the factor of passage into otherness, whereas the forms remain in themselves. Yet, the reader may ask, do not the forms participate in each other? The dialectic, in fact, is a passage of one form into another. Now the passage is radically

different in the two cases. It is important to realize that the communion among forms does not abrogate their distinct identity; whereas the relativity of generated things is one whereby they fuse with each other. The first is a non-contradictory relation; the second is not. Plato asserts in the *Phædo* (101*c*) that forms commune with each other; thus the number two partakes of duality. He also says that each form is in itself. Thus we have both the self-identity of the forms, and their relatedness. Communion is a relation between entities which maintain their self-identity; in fact, there can be no relation unless the terms be distinct and independent. But passage in the world of generation is such that things depend on each other and lose their self-identity.

Enthusiasm is communion with the forms. Here, likewise, we must draw a line between the *eros* which partakes of the receptacle and is a form of relativity and the *eros* which is pure and involves maintenance of self-identity in relationship. On the lower level, the *eros* arises from incompleteness, as with the philosopher who seeks wisdom because he lacks it. All achievement is passage from non-being to being and is a sign of imperfection. This is *eros* as need, hence as dependence. On a lower level still, we have the enthusiasm of the democratic man. He fluctuates in his enthusiasms; he is open to all suggestions and influences; he has no selfbeing. Furthermore, he participates in the receptacle in that he is catholic in his interests. Most important of all, his enthusiasms are spurious; he is drawn to a variety of occupations by way of "fancying" them. He plays at being a philosopher, an athlete, a man of affairs. He is never convinced; he is only impressed.

Consider the *eros* on its higher levels. The love of reason for the ideas is based on inward conviction; it is a fixed purpose; therefore it is enduring. The relation of the eternal reason to the ideas is a timeless participation. In the ideal polity, each citizen has a specific function, selected with reference to the pattern of the whole. By virtue of his function, he possesses a self-identity. Moreover, he is selective in his enthusiasms.

On its highest level, the *eros* arises from completeness. We have spoken of love and action which spring from lack; there is also love which springs from strength. God, being perfect, bears a grudge to no one; he alone can transcend himself and sustain a

relation to others. In the *Phædrus* (246*e*) and in the *Laws* (900 ff.) Plato speaks of the care of God for the created world. Such love is an overflow of what is complete, not an attainment of perfection; it is love without dependence on the object loved.

The receptacle, then, is a mixture of indeterminateness with receptivity to determination. Becoming, change, temporality, express this combination of being with not-being, of being determinable and of not being determinable. Novelty arises from the catholicity of the receptacle, and its consequent passage to other forms. On the other hand, the spatial, given character of concrete things is an abstraction from this mixture, through the omission of the negative pole; it consists in the character of the receptacle as receptive, as being determined, such that we are enabled to say 'this object is thus and so'. We have spoken so far of the relation of the receptacle to the world of generation, and to the forms. There is also its relation to God. We have here the relation of the receptacle to the mechanical cause, to the formal cause, and to the efficient cause. God is able to persuade the receptacle to work for the best. As there is the aptitude in the receptacle to receive the forms, so there is the aptitude to be persuaded by God. But again there is an ambivalence. The receptacle is refractory (35*a*). But it can be won over. This victory is never final; the submission is not enduring.

Necessity submits voluntarily to God under his persuasion. Reason rules over necessity. We have the victory of persuasion over force. Nevertheless there are limitations to the aptitude of the receptacle to be persuaded. The result of God's intervention is good *as far as possible*. This phrase is repeated in the *Timæus* over and over again (30*a*, 32*b*, 38*a*, etc.). Also, reason persuades necessity to conduct toward the best the most part of the things that become. Thus there are some things which wholly escape the principle of the best. Such things are completely irrational, and inexplicable. Moreover, persuasion, such as it is, does not endure. Hence God is not omnipotent; he must coöperate with necessity, and the result of the coöperation bears the impress of both causes. God is not the Whole; he must act along with other agencies; he is one among many.

If the receptacle is capable of being persuaded by God, it must be because it can understand God. The conclusion seems inevitable that the receptacle has the potency of reason, and that there is a primordial relation between God and the receptacle. But there are degrees of understanding; the intelligence in the receptacle can be of no higher rank than that of the intelligence latent in desire. In the *Nicomachean Ethics* (1098*a*), Artistotle says that the soul may be rational in two senses: in being capable of thinking, and in being capable of understanding reason. Desire is not a faculty of thinking, yet it is rational in this second sense; it can understand and obey reason. The receptacle might be deemed rational in a similar sense. Plato states (*71a, c;* see also *Rep.* 431) that man's beastly desires may be brought under the control of reason either by threats and violence, or by the exercise of a spell over them. We must, then, assume an ultimate polarity between God and the receptacle, a fascination of chaos by the divine, remembering also that the fascination is possible because of "the innate sweetness of desire" (*71c*).

Shall we say that the receptacle is evil? Though we cannot answer this question dogmatically, the tenor of the relevant passages suggests a negative reply. The receptacle is "other" than God but not antithetical to him. Necessity coöperates with the principle of the best (*48a*); God uses the wayward cause for the production of the good (*68e*). Yet the fact remains that the receptacle is reluctant, never completely won over. Its participation in the generation of things means that the world has an aspect of chance and confusion. So, in the *Theætetus*, Plato says "It is impossible that evils be done away with, Theodorus, for there must always be opposition to the Good" (*176a*). And in the *Laws* he refers to the immortal conflict between good and evil (*906a*).

Perhaps our problem is only verbal. If by evil we mean instability, casualness of attachment to the good, then the receptacle has an evil nature. But it is not evil in any other sense of the word. God is good, in the sense that he is timelessly wedded to the good; but the receptacle is not evil in the sense that it is identified with evil; it is not identified with anything, good or bad. As between the two, it is neutral, because by its nature it is

indeterminate. It is true that good things pass, but so do evil creatures. If the receptacle resists God, so would it resist the Devil (were there one) in order to maintain its indeterminateness.

Another question is whether the receptacle is real. We have seen that it is not-being; yet in some sense it is real, since it may thwart God. It is a cause—a passive cause; it is power, and is therefore real. Against its reality may be brought forward the argument that it is given neither in experience nor to reason. How then is it known to be, at all? Now it is only natural that the receptacle should not be given in experience. Experience is of the "mixed", of the indeterminate as determined. Experience is of a creature, not of a creative factor. Again, it is only natural that the receptacle should not be conceived by thought, since to conceive is to determine; it is to apprehend a form, or to assign a form to a particular. In fact, none of the creative factors enter the world of discourse, whether of experience or of reason. They are the causes of the world of discourse, and are known by inference only. The receptacle is known to be, because it is a necessary inference from the world of experience; it accounts for the element of chance and of flux in things. It is known without being given; it is apprehended by "a bastard sort of reason" (52*b*). Like the realm of forms (as discussed in the *Phædo*) it transcends the world of generation; it is brought in as a hypothesis to account for phenomena.

But it may be asked: is it consistent with Plato's philosophy that what is unintelligible should nevertheless be real? It is true that in many passages Plato identifies the real with the rational, but it is also true that there are passages (especially in the later dialogues) in which he seems to abandon that identification. Thus in the *Politicus* (284*e*) he says that excess (absence of measure, negation of the Limit) is real. In the *Philebus* (26*c*) he speaks of the Unlimited as having a unity. One's position on this question depends on one's interpretation of Plato's philosophy as a whole; on whether one understands Plato to be a thorough-going rationalist or not; and this, in its turn, depends a good deal on whether one forms one's opinion about Plato from the early dialogues (especially the *Phædo*) or whether one attaches equal importance

to the later dialogues. To the writer it seems clear that, for Plato, reality includes an irrational factor, a surd—brute and inexplicable fact.

The reader must bear in mind that the receptacle is not the only irrational factor mentioned by Plato. Beauty is beyond concepts, and the Good is beyond truth. Further, the Good is said to be beyond being (*Rep.* 509*b*). In a sense, both the receptacle and the Good are non-beings; and yet, in another sense, they are real, because they are the causes of being. Thus Plato speaks of the Good as a form and of the receptacle as an *eidos*.

The notion of the receptacle is one of the outstanding insights in Plato's philosophy. He treats it in a meagre fashion and hesitantly, furnishing hints rather than statements. He is similarly modest and reticent in the treatment of all his outstanding insights, as for example, of God and of the Good. Obviously, this attitude is due to the difficulty of the subject-matter; perhaps it is also due to his conviction that the most important truths may not be written up in books and flung, as it were, to the public indiscriminately; but must be reserved for the few and the initiated, who have undergone the proper discipline of thought. Thus Plato leaves us at the "vestibule" and we must be content with glimpses from a distance.

To grasp the receptacle in its full significance is to realize that any account of Plato as a rationalist is inadequate. The receptacle is the factor of brute fact; it measures the failure of the forms as causes in the world of generation. In creation there is something not in accordance with the eternal pattern. And even to the extent that order is established, this order may be overthrown; laws come and go. The receptacle functions as a principle of entropy in nature. It is the cause of the reverse *eros*, whereby nature disintegrates. Beyond a point, the natural processes are unpredictable and contingent. Science is faced with objective chance and therefore is not science; accounts of the world can be no more than probable at best. Similarly, no exact description of an individual thing is possible. Thus the world is opaque to reason.

It is possible to separate Plato's description of the receptacle from his appraisal of it, to accept the first and to reject the

second. For Plato, the receptacle represents a loss in being, a fall from the classic perfection of the forms, into the darkness of the cave. But that very darkness may seem to another as endowing the receptacle with importance. The concrete object is obscure to reason, because by virtue of its infinite complexity it may not be comprehended by a formula. It is indeterminate, because no form may exhaust its content. And the conflict between the patterns and the receptacle, the risk of defeat by the latter, is of the very essence of activity. The flux, which Plato decries, is the display of the endless creativity of being. In short, it is possible, departing from Plato, to construe the receptacle as a contribution to reality, not as a diminution of it. Plato's own mind exhibits the traces of the receptacle. His dialogues are a flow of thought, meandering from argument to argument, carrying a point and then losing it, now confused, now clear, gradually gathering force and issuing into brilliant insights, never resting in a system. In his works, the end is not contained in the beginning, but thought is made in the process of thinking. Plato's practice does not conform to his theory; nor should it do so, if the alternative view be correct that the factor which escapes determination in knowledge is also the factor which furnishes content and novelty to life and to thought.

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AESTHETIC IMITATION AND IMITATORS IN ARISTOTLE

IF Aristotle had left us a list of classes of human beings in order of excellence, as Plato did in the *Phædrus*,[1] he would apparently have placed poets and imitators in or near the first class along with philosophers, musicians, and lovers, and not as Plato did, in the sixth class, below tradesmen and gymnasts. But if he had done this it would have been because the Plato of the *Symposium* had suggested to him how he might refute the apparent argument and pessimistic mood of *Republic* X. Aristotle has left no explicit analysis of the term imitation as applied to fine art, but there is abundant material in his works for the construction of an hypothesis as to its meaning. And when that conception has been built up, it is striking to note that the imitative artist shares with the philosopher love of learning and concern with universal forms, with the lover a tendency toward divine madness, and with the musician fondness for harmony and rhythm, power to depict character, and moral efficacy. Clearly the strain of aesthetic reflection which Aristotle carried forward from Plato was not the one in which paintings and dramas are described as pale and inert replicas of substantial realities, but rather the one—much modified, secularized, and brought down to earth—in which the love of True Essence increasingly inspires makers of fair forms who more and more in their upward progress create moving images of eternity.

The most damaging association attaching to the word 'imitation' is that of its parasitic status. Plato was often troubled by this weakness of imitative art.[2] An imitation, it seemed to him, is nothing in and by itself; taken apart from its original, it collapses. And being nothing, it can do nothing. It lacks substance, function, utility. Rational esteem obviously belongs to such being as can initiate processes, and needs nothing for its existence and activity beyond what it can furnish from itself. If drama must be defined as second or third-hand process, blind mimickry, and if paintings are little else than inert mirrorings of some more authentic reality,

[1] 248. [2] Typical passages are *Ion* 533; *Rep.* 596; *Sophist* 234.

then clearly drama and painting deserve to be stigmatized as slavish while the original pattern may be honored as royal and excellent. This damaging association does not attach to the word 'imitation' for Aristotle. For him the individuality of an imitative art-form could be distinguished by analysis into its various aspects as any other kind of nature could. He proceeded with as little inhibition to the statement of the functions of poetry as of virtue, and a soul was ascribed to tragic substance as to the living person. Indeed, Aristotle so construed imitative art that an example of it could contain more essence than its apparent original—men's actions and passions in real life.

The first reason that imitative art ranks high for Aristotle is that it participates in the productive power of art as such. The energy involved in the very concept of the genus qualifies for him those arts devised to give pleasure and ornament leisure as well as the utilitarian arts. Plato had already defined art as production according to right reason, and had even classed a certain type of artist with the philosophers in the first group. But when Plato used the term 'art' in this complimentary sense he meant the employment of order for the understanding and control of nature, as in the arts of the physician, statesman, and pilot. The absence of 'art' in this sense is often assigned by him as the most obvious characteristic of the pleasure-producing activities—flute and lyre-playing, tragedy and comedy, and persuasive speech. By the true 'art' of building, he says, we construct a house, but by the dream-like graphic arts we sketch in a replica of it.[3] Aristotle, on the other hand, was disposed to assign to the pleasure-producing species of art all the wisdom and potency characteristic of the genus. The logical way to begin understanding Aristotle's golden opinion of 'poets and imitators' is then to examine further his general concept of art.

Nature and art, Aristotle says, are the two initiating forces in the world. The difference is that nature has her principle of motion within herself, while "from art proceed the things of which the form is in the soul of the artist".[4] But if the dynamic principle inheres in nature and not in art, at least art is in this respect of bringing things into being nature's closest analogue. Although

[3] *Sophist* 266. [4] *Met.* 1032*a*.

—as will be more fully developed later—the relationship between art and reason is close, the first idea suggested by the term 'art' to Aristotle is productive force. And this applies to all types of art from the doctor's curing of bodies through the architect's building of houses to the poet's and musician's production of pleasure. "All art is concerned with coming-into-being, *i.e.*, with contriving and considering how something may come into being."[5] Art has to do with the making of things made.[6] The arts are among the principles or sources of motion and change.[7] As nature was primarily for Aristotle not a sum of entities, such as stones, plants, and animals, but *Natura Naturans*, the vital process working its way out into and up through these entities, the developing and reproducing, coming-to-be and passing-away of things, so art was for him a doing and shaping, a movement set up in some medium by the soul and hand of the artist. This being Aristotle's view of art in general, it is not surprising to find 'fine art' for him, not a sum of art-objects lying inert in a museum, but patterned energy. His approach to art was, if possible, even more the physiologist's than the anatomist's, for, although he draws in detail the bony framework of a tragedy and always emphasizes the importance of the schema of beautiful things, he is still more concerned with the functions of beautiful bodies. In the first sentence of the *Poetics* he serves notice that he is sticking to the etymological meaning of his subject (poetry-making) by stating that he is concerned with the specific dynamics of each kind of poetry. Concerning music we are told that it is made out of motion, has an affinity for activity,[8] and performs four functions.[9] He tells us how force enters into poems, plays through them, and issues out of them. Charged from without at the beginning by the potency of genius, poems and melodies and harmonies work out their mission, so to speak, by purging, relaxing, elevating, and straightening human souls.

Art, then, is human making in the image of divine making, for art emulates the energetic processes of nature, and God is the Prime Mover of nature. Though less in degree, Phidias's wisdom is parallel to the wisdom of the philosopher whose concern is

[5] *Eth. Nic.* 1140*a*.
[6] *Met.* 1025*b*.
[7] *Ibid.* 1013*a*.
[8] *Prob.* 920*a*.
[9] *Pol.* 1339*a*; 40*ab*; 41*a*.

with the divine ultimate principle of the universe, and whose ways are themselves godlike.[10] Nature furnishes the law by which a man begets his child, but an architect draws houses out of stones on an analogous plan.[11] How then does God make? According to a constantly repeated pattern taken finally from biological process—the development of form out of matter, or the maturation of the complete individual out of the shapeless germ. Aristotle compares 'form' or 'fulfilment' to being awake, and 'matter' or 'potentiality' to being asleep. Or actually performing an act is 'form' and merely being able to perform the act is 'matter'.[12] Nature works then by urging all things to realize their capacities to the full, and the soul of the artist plants that same drive toward self-completion within some 'matter'. A bronze bowl issues from the metal on the same essential plan as the oak grows from the acorn.

The productive energy that animates all art will thus save even imitative art from being mere lifeless copying. The second reason why imitative art ranks high for Aristotle is that the relationship of resemblance involved in imitation does not for him imply the monotony of bare repetition. Although he teaches that it is the business of fine art to imitate the passions and actions and characters of men, the resemblance is not to be limp and bloodless. Artistic imitation is for him invention. The poet's power of imitating is what entitles him to be called a 'maker', Aristotle says.[13] Surely in some sense when imitation occurs, 'like meets like'. But Aristotle is careful to explain that when like meets like in any significant fashion in the universe of nature or art we do not have the phenomenon of identical twins. After noticing that the most striking character of a civic community is the creation of concord through the cohabitation of opposite classes of people, rich and poor, young and old, the Aristotelian author of *De Mundo* proceeds to generalize.

> It may perhaps be that nature has a liking for contraries and evolves harmony out of them and not out of similarities. . . . The arts apparently imitate nature in this respect. The art of painting by mingling in the picture the elements of white and black, yellow and red, achieves representations which correspond to the original object. Music too, mingling together notes, high and low, short and prolonged, attains to

[10] *Eth. Nic.* 1141*a*.
[11] *Met.* 1034*a*.
[12] *Ibid.* 1048*a*, *b*.
[13] *Poet.* 1451*b*.

> a single harmony amid different voices; while writing, mingling vowels and consonants, composes of them all its art. The saying found in Heracleitus the obscure was to the same effect: "Junctions are: wholes and not wholes, that which agrees and that which differs, that which produces harmony and that which produces discord; from all you get one and from one you get all".
>
> Thus then a single harmony orders the composition of the whole—heaven and earth and the whole Universe—by the mingling of the most contrary principles . . . forcing them to live in agreement with one another in the universe, and thus contriving the permanence of the whole. The cause of this permanence is the agreement of the elements, and the reason of this agreement is their equal proportion.[14]

In a similar vein Aristotle argues that the coming-to-be of things involves the interaction of differents as much as the assimilation of like to like. "It is a law of nature that body is affected by body, flavor by flavor, a color by color." Yet if the terms were absolutely alike no affecting could occur; nothing would happen. The agent and patient in the process of growth must be alike in genus and unlike in species. Within the common substratum the driving force for change comes from the tension of opposite principles, one operating, the other undergoing an operation.[15]

A second damaging association of the term 'imitation' is thus seen to be absent in Aristotle's usage. The condition favorable to creative activity throughout the cosmos is not bare like to like—futile repetition—but the mutual adaptation of contrary principles. New living creatures can only be born when male meets female and not when male meets male, and a similar condition is required for artistic procreation. A right ratio must adapt the two terms to each other, but for actual birth in beauty there must be opposite functioning in the two members of the coalition. Tragedians have themselves an affinity for the noble characters they depict, and comedians are in some sense like the inferior men of their plays. A good portrait imitates a man's character through the delineating of his face. Phrygian music is like a Phrygian mood, and Dorian melody sober like the character it expresses. But the poems and melodies and portraits come into being by the marriage of the artist's soul, which carries in itself the form of what is to be, with some bodily medium in real life. Thus the making of beautiful forms through imitation involves polarity within the resemblance,

[14] 396*b*. [15] *De Gen. et Cor.* 323*b*, 324*a*.

and is finally a variant on the theme of the development of form out of matter. "Imitation in the sense in which Aristotle applies the word to poetry, is . . . seen to be equivalent to producing or 'creating according to a true idea' which forms part of the definition of art in general."[16]

In the third place we might expect Aristotle to put poetical imitators into the same high class with philosophers because of his various allusions to the intellectual element in imitation. He likens the imitative to the intellectual process both in its instinctive origin and in its full flowering, and one is justified in believing that progress in universality is the sign of excellence in fine art as it is explicitly stated to be in intellection. Aristotle pictures that progress in the development of knowledge, and we may construct the parallel for fine art, thus exhibiting the kinship of the two. In the case of knowledge the simple sense-experience comes first. If the sensation can persist or "make a stand", and not be carried away in a meaningless flux of animal responses, we have what Aristotle calls the presence of the earliest universal in the soul. But if the sensation dies as soon as it is born, and there appears no nisus toward memory nor the accumulation of skill, then the indispensable germ of human knowledge is lacking. The sensation must be remembered; the memory must become meaningful for common experience; common experience must be rationalized by the arts and sciences; the arts and sciences must be integrated by the all-embracing wisdom of philosophy.[17]

Although the material on the development of the function of imitation is not massed in one place as is this discussion of growth in knowledge, it may be assembled from various places and is like and in part coincident with the other. Just as human intelligence does not begin to function until an elementary power to universalize, to transcend the particular event, arrives in the soul, so in fine art a first condition is some sort of combination of the parts into a whole. "The beautiful differ from those who are not beautiful and works of art from realities in that in them the scattered elements are combined."[18] However, corresponding to the sensations as pre-logical elements in knowledge, there are pre-technical

[16] S. H. Butcher, *Aristotle's Theory of Poetry and Fine Art* 153.
[17] *An. Post.* 99*b*, 100*a*. [18] *Pol.* 1281*b*.

elements which antedate artistic combination but are necessary to its existence. Such would be the colors in painting, the separate notes of the scale in music, words with their properties of clearness and meaningfulness in poetry and rhetoric, incidents of suffering, of reversal of fortune, of discovery, of identity, furnished by the history of individuals and nations and grist for the tragedian, and the particular thoughts and feelings of men used as material by all literary composers.

The raw matter of art begins to be organized when reason combines these elements in certain proportions. The first stand of a universal in knowledge is matched by a first stand of combination in art. Such would be the agreeable complementariness of colors in painting, and the harmonious relations of tones in music. Other examples would be the ornament of metaphor which is "a sign of genius, since a good metaphor implies an intuitive perception of the similarity in dissimilars";[19] the degree of kinship in the parties to a deed of horror; and the direction of a movement from happiness to misery or misery to happiness in a play. These are all simple threads of connection with an affective quality; and they mark the first stage of the weaving of elements into beautiful wholes.

The next step in the growth of knowledge after persistence in memory is called "learning by experience". A doctor, for instance, has this grade of knowledge when he can name the nature of an illness though he does not possess any general scientific principles concerning it. It is the perception without rational grounding of the total significance of a thing. Though experience is less excellent than science in respect to the amount of rationality embodied in it, it sometimes surpasses the higher types in its immediate utility. A doctor who through empirical knack, through responsiveness to the character of the disease immediately before him, can cure this particular sick man, may be better for the moment than his superiors in scientific medicine.[20] The aesthetic analogue to this empirical faculty would apparently be illustrated by the immediate responsiveness of the soul to the soul-mood in music. A simple arc of stimulus and response seems to bind

[19] *Poet.* 1459*a*. [20] *Met.* 981*a*.

together the sensitive hearer and the tune. No inference is necessary. The nature of the tune is felt at once. When Aristotle declares musical modes to be the most imitative of all artforms, he means that the resemblance of music to moral states is more direct than the resemblance of a picture or statue to an emotional content. "Rhythm and melody supply imitations of anger and gentleness, and also of courage and temperance, and of all the qualities contrary to these, and of the other qualities of character. Experience proves this. For we experience the effect upon our soul of hearing them."[21] "The Hypophrygian mode has a character of action (hence in the *Geryone* the march-forth and arming are composed in this mode); and the Hypodorian is magnificent and steadfast. . . . The Phrygian is exciting and orgiastic."[22] Music's rendering of character is not as rich in universal significance as tragedy's imitation of a complete and serious action, for tragedy presents the destinies of a group of human beings; but it is more effortless. There is, as it were, an underground passage connecting the mobile energy of the soul and the mobile energy of music that gives the one quick access to the other.

Aristotle says that the aesthetic experience of enjoying the likeness in a portrait is also on this level of learning or experiencing. "The reason of the delight in seeing the picture is that one is at the same time learning—gathering the meaning of things, *e.g.*, that the man there is so-and-so."[23] But the imitation of a portrait is not as immediate as the imitation of a tune, and the pleasure of detecting the resemblance is therefore, perhaps as keen, but certainly more roundabout. In taking in the whole sense of a picture, we do not respond intuitively to a stimulus, but we draw an inference, and feel a semblance of the scholar's delight when new light breaks in on the mind. For, says Aristotle, while shapes copy character, they exhibit rather the symptoms or deposits of a mental habit than the mental habit itself.[24] It is the body of man that the portrait must render, and bodies are molded by passion but are not the very stuff of passion. The pleasure of learning occurs in this case when a pattern of line or color has achieved such unity that we recognize not only the class of thing intended

[21] *Pol.* 1340*a*. [22] *Prob.* 922*b*. [23] *Poet.* 1448*b*. [24] *Pol.* 1340*a*.

(man) but the member of the class (So-and-so). We enjoy palpating the essential soul beneath the outward show of bodily figure. We have "gathered the meaning" in that we have discovered an identity of character connecting a flesh-and-blood person and well-composed pigment. Right use of complementary color helps representation, Aristotle says. But representation arrives when the significant object shines through the paint or line, and the logical label of a name can be attached to the whole. "The most beautiful colors laid on without order [that is, without coöperation toward a single end] will not give one the same pleasure as a single black-and-white sketch of a portrait."[25]

The function of imitation reaches its goal when it produces a good tragedy. For while music and painting and sculpture imitate character, and are meaningful wholes, the "true idea" according to which they are produced is not as rich and strong as the unity of plot. Degree of universality measures honorableness for Aristotle both in knowledge and in art. Order and symmetry, the disposing of parts toward a single end, are present in all imitations; but the tragic plot, with its greater compass, shows aesthetic order at its maximum. Within its combining force it holds together more parts and more varied media of representation than other art-forms. Aristotle compares the organic unity of a musical mode to a political community with its ruling and subject part.[26] He might have compared a tragedy to an empire with political communities as its members; for melodies are but parts of plays. Or, since characters are also but parts of plays, he might have compared tragedy to an organism of organisms.

The unity of action in a well-contrived tragedy corresponds to the full-blown rationality of science in the world of intellect. Indeed, Aristotle goes farther, and in one place calls tragedy "philosophical".[27] The superiority of science (and the art which is equivalent to the scientific control of nature) over experience is not only its generality, its stretch and compass, but its explanation of why things come to pass. "Knowledge and understanding belong to art rather than experience, and we suppose artists to be wiser than men of experience . . .; and this because the former know the cause, but the latter do not. For men of experience know that

[25] *Poet.* 1450*a*, *b*. [26] *Pol.* 1254*a*. [27] *Poet.* 1451*b*.

the thing is so, while the others know the 'why' and the cause."[28] Now it is the function of a plot to exhibit the 'why' of human destiny. And the more convincingly the causal sequence is given, the better the plot. "The only events of which absolute necessity can be predicated are those which form part of a recurrent series",[29] Aristotle says, and the virtue of a tragedy is for him the exhibition of misery or happiness as necessary, as something that under the circumstances had to be, as part of a series which might recur because illustrative of law. "The poet's function is to describe, not the thing that has happened, but a kind of thing that might happen, *i.e.*, what is possible as being probable or necessary."[30] The most ambitious poet will imitate an "action" which is a continuous curve of destiny absorbing and sweeping forward by the law of its movement all particular events and individual persons, as a line resolves points. He will sketch in a system of men and things as the pattern of their interaction brings weal or woe; the diagram of a king's rise and fall; the bonds that tie men to tragic deaths. In the development of the characters and speeches of a tragedy the logic of the necessary rules over all; marvels, discoveries, reversals, choruses, must all seem links in the fateful chain.

Art is always less than philosophy for Aristotle, but the kind and amount of unity required by him for a good tragedy (with its several incidents so closely connected that the transposal or withdrawal of any one of them will disjoin or dislocate the whole[31]) makes it a second and close parallel. All works of art which have plots or stories for their soul are 'living organisms', but the tragedy is more concentrated than the epic, and so is a superior type of imitation. The improvisations that were the ancestors of tragedy and comedy, hymns, panegyrics, and lampoons, were imitations of character and passion, and had, so to speak, amoebic souls, but they grew rather than were contrived. The spirit of reverence or of revelry conveyed by them was scarcely the result of fully self-conscious art. They were more properly on the stage of 'experience'.

By thus comparing the artistic function of imitation to the intellectual function—as indeed Aristotle himself justifies us in

[28] *Met.* 981*a*.
[29] W. D. Ross, *Aristotle* 81.
[30] *Poet.* 1451*a*.
[31] *Poet.* 1451*a*.

doing—we have watched the development of the universal element in art from a slight two-term relationship to its complete realization in the embodied logic of a tragic plot. For imitation, like everything else in Aristotle, has matter and form.[32] In *Republic* X Plato treats imitation not as an expanding but as a highly diminished function. As the 'Idea' passes downward through the employment of the craftsman to that of the imitator, it progressively narrows its compass. A painter of a bed not only copies the space-and-time bed that some carpenter has made, but "lightly touches on a small part even of it", because the painter gives a special view of the bed, either oblique or direct, according to the angle of vision.[33] Thus in Plato we have the attenuation of a universal in art to the limit of individual vision, while in Aristotle the universal is itself present in art, and is called "serious and philosophical".[34]

If the philosophical nature of a good tragedy suggests the right of imitative art to be classified with philosophy among the highest types of human product, the connection between pleasure and imitation suggests an affinity with the true love of beauty and the music that echoes the orderly motions of the stars. For poets do more than create a perfect whole according to the true rule that is in their mind. They make that rule, that right reason, that philosophy, attractive. The pleasantness of imitative art might be called—adapting a phrase of Aristotle's—the bloom on the face of reason. Plato had distinguished between kinds of pleasure and had even called the pleasure in abstract mathematical form "pure".[35] But on the whole he placed the pleasures connected with imitations in a relationship of opposition to what is excellent. Doubtless his very sensitiveness to the charm of poetry made him fear its common use as a dangerous sorcery. With Plato, Aristotle recognized that pleasure is an integral part of the process

[32] It is tempting to think that this scheme of the range of the imitative function—from its potentiality in instinct to its actuality in plot-creation—was at least subconsciously in Aristotle's mind when he added, after the imitative instinct, a second instinctive cause of poetry in "the sense of harmony and rhythm" (*Poet.* 1448*b*). For, as we have seen, imitation, properly nourished, develops into a prerogative instance of harmony. And rhythm is the principle of order, and the highest order is necessary order. We delight in rhythm because it regularizes and numbers motion (*Prob.* 920*b*). Can it be that the two causes of fine art are imitation in its most naïve and in its perfected phases, its matter and form?

[33] *Sophist* 598. [34] *Poet.* 1451*b*. [35] *Philebus* 51.

of imitative art. He even called the production of pleasure the final cause or ultimate purpose of such art.[36] But he reëxamined the concept of pleasure, and on the basis of his findings counted pleasureableness a virtue and not a handicap. Aristotle's treatment of the relationship between fine art and pleasure is, then, the fourth reason why we should expect him to rate poets and imitators in the first class.

Apparently Aristotle's most considered opinion on the nature of pleasure made it not an independent class of entities but an accent and high light on the function with which it was associated and from which it derived its ethical rating.[37] As such, a function could be wolfish or asinine; the pleasure qualifying its performance could be through a legitimate metonymy called by the same hard name.[38] But Aristotle thought it was a mistake to judge of pleasure in general by its lowest connections and manifestations. Only those who know the pleasures that accompany pure thought and the listening to music and the viewing of sculpture know pleasure at its best and in its essence.[39] For pleasure is carried along by the nisus of nature toward the good; just as nature may turn up "worms and beetles and other ignoble creatures" that belie her general good intention,[40] so pleasure, though fundamentally the ally of reason and nobility, may be the gratification accompanying the lowest impulses. In general pleasure is for Aristotle the symptom of the fulfillment of desire, the consciousness of the fullness of life,[41] and when these are in accordance with right reason, then also pleasure is in accordance with right reason. When he says that the final cause of tragedy is to produce pleasure he clearly means that a mental state is aimed at which is reasonable and choiceworthy.

Since pleasures are for Aristotle "peculiar" to the activities which they intensify and crown, it is obviously necessary to understand the actual functions of imitations in order to understand their emotional color. The pleasures in question accompany processes of repletion and purgation, and also uniform, continuous activity. Art's humblest function is to satisfy a want or relieve a pain, on the analogy of the relief to hunger furnished by food.

[36] *Poet.* 1453*b*.
[37] *Eth. Nic.* 1174*b*.
[38] *Magna Moralia* 1205*b*.
[39] *Eth. Nic.* 1176*a*.
[40] *Magna Moralia* 1205*a*.
[41] *Eth. Nic.* 1175*a*.

Sleep, food, drink, and music make "care to cease".[42] Sicknesses both of soul and body arise out of excess and defect, and when a man's energy is depleted by the day's labor, his power may be restored to normal by the enlivening stimulation of imitative music. As art may thus fill up the empty places in the soul, and increase energy, so it may clear our souls of unhealthy accumulations. The psycho-physical system calls as often for reducing and cathartic potions as for nerving tonics. There are certain emotions which, though wholesome in proper degree, readily become poisons. There are persons who have small resistance to these emotions and fall ill of them with great ease. "Feelings, such as pity and fear, or again, enthusiasm, exist very strongly in some souls, and have more or less influence over all. Some persons fall into a religious frenzy, whom we see as a result of the sacred melodies—when they have used the melodies that excite the soul to mystic frenzy—restored as though they had found healing and purgation. Those who are influenced by pity and fear—and every emotional nature—must have a like experience, and others in so far as each is susceptible to such emotions, and all are in a manner purged and their souls lightened and delighted."[43] Aristotle calls the production of such a catharsis the peculiar pleasure of tragedy.[44] It has been argued that in the missing chapter of the *Poetics* on comedy the final purpose of the lighter sort of drama may have been given as the purgation, perhaps of envy and malice, perhaps of impure pleasure.[45] Not only music, then, but the drama serves humanity by unburdening heavy souls and inducing the peculiar pleasure of relief.

The pleasure takes the color of the function; but the definition of the pleasure is not exhausted by the statement of the character of the function. And pleasure's capacity to exalt the status of the imitative arts lies in the something plus that it carries beyond utility. For if the excellence of the pleasure of tragedy were nothing more than the virtue of purging, then the tragedian would become a physician of the soul, and we would rank him in the fourth class with the other physicians. Or, if one thinks of the relaxing and correcting that music accomplishes as instrumental to state-education, then the imitator may be classed with good

[42] *Pol.* 1339*a*. [43] *Ibid.* 1342*a*. [44] *Poet.* 1453*b*.
[45] Lane Cooper, *An Aristotelian Theory of Comedy* ch. ix.

servants of the common weal, perhaps in the third class with the politicians, economists, and tradesmen. But the pleasure is a supervening perfection, and gives to as much as it takes from the function which it accompanies. "For an activity is intensified by its proper pleasure; *e.g.*, it is those who enjoy geometrical thinking that become geometers and grasp the various propositions better, and, similarly, those who are fond of music and building, and so on, make progress in their proper function by enjoying it."[46] The pleasure which is in a sense only the feeling-tone of a vital process, in another sense is beyond—superior to—vital process, and has the power to turn back upon it and transfigure it. The great playwright who cures souls through his magic is not socially useful; he is glorious. And that is why he belongs in the highest class that can be named. And the musician who enables us to spend our leisure in rational enjoyment is not a mere benefactor; he is a genius. For Aristotle, himself, among his various statements of the nature of pleasure, declares it to be at its best, no longer the handmaiden of function, but selfsufficient and complete energizing. Of the pleasures of intellectual and aesthetic contemplation it can be affirmed that they lack nothing, that they are fitted to give a godlike content to that life of leisure for which the life of toil exists.

The fifth and final ground upon which Aristotle would presumably have placed imitators in the first class is his interpretation of their temperament. Poetry, Aristotle says, "demands a man with a special gift for it", and this gift proves to be the plasticity typical of the melancholic. The dramatist must be able to feel himself into the experiences he is portraying. He must not only be able to see the scenes he is describing as if they were before his very eyes. His body must go through the very motions that the human drama shaping itself in his fancy requires.[47] This is the type of person whose story will be convincing. He must live the life of his brainchildren as he works. The man with an innate facility for taking on shape readily is the born genius.

It is this euplasticity characteristic of the "tribe of imitators" which has much to do with Plato's poor opinion of them. These clever multiform gentlemen could do everything, and were noth-

[46] *Eth. Nic.* 1175*a*. [47] *Poet.* 1455*a*, *b*.

ing. Their magical assumptions of any part, their facile apings of gesture, look, and manner, were carried through at the expense of unity and consistency of character. Plato admired steadfastness of purpose and singleness of function; in his ideal state one man played one part only. Therefore this bewildering chameleon, who could assimilate himself easily to alien moulds, and never seemed to settle himself to any definable employment or form, hardly fitted the program of the right sort of city. He was two removes from the philosopher.

But Aristotle's philosopher, though devoted to truth, was none the less euplastic. To be wholly rational is to adopt oneself with infinitely graduated responsiveness to the peculiar nature of the members of the objective world. As the hand is the tool of tools,[48] so in the end is the mind the form of forms.[49] The soul in knowing must somehow be in essence all the things it knows, just as the dramatist in engendering his play must be his *dramatis personae*. The gift and greatness of both philosopher and poet is this impressionability—one might even say, this actual lack of any independent unassimilable substance. Aristotle then interpreted as a virtue that which struck Plato as the dissipation and prostitution of power.

Aristotle presses back the high gifts of both these classes of men to a source in their bodily make-up: the melancholic temperament. The predominance of the nimble, winelike black bile in their systems makes them excitable, moody, restless in sleep, and with a tendency toward mental derangement. He who has black bile in proper proportions in his body is the genius; in extreme proportions is mad. Aristotle mentions Empedocles, Plato, and Socrates, among philosophers, as atrabilious, and "most of the poets".[50]

Although with respect to the status of imitative artists Aristotle seems in general to be taking the opposite position from Plato, in most cases Aristotle's thesis is an elaboration of an aspect of Platonism. In the very *Phædrus*, in which Plato classes poets and imitators in so humiliating a way, he may be said to have anticipated Aristotle's grouping of these artists with philosophers as

[48] *De. Part. An.* 687. [49] *De An.* 429*a*. [50] *Prob.* 953*a*.

melancholics. For the doctrine of divine madness, which "enters into a delicate and virgin soul, and there inspiring frenzy, awakens lyric and all other numbers", has much in common with the theory of the melancholic temperament as set forth by the physician's son. Although black bile is erotic and unbalancing in tendency, it is for Aristotle the fire that warms the genius of all gifted souls. Again one part of Platonism seems to have helped Aristotle to reply to another part.

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THE PROBLEM OF SUBSTANCE IN SPINOZA AND WHITEHEAD[1]

I

In his *Process and Reality* and *Science and the Modern World* Professor Whitehead explicitly acknowledges that his metaphysics bears a close relation to that of Spinoza. Thus he writes:

> The philosophy of organism is closely allied to Spinoza's scheme of thought. But it differs by the abandonment of the subject-predicate forms of thought, so far as concerns the presuppositions that this form is a direct embodiment of the most ultimate characterization of fact. One result is that the substance-quality concept is avoided and that morphological description is replaced by description of dynamic process. (*P.R.* 10.)

Similarly in *Science and the Modern World* (102-3) he says:

> In the analogy with Spinoza his one substance is for me the one underlying activity of realization individualizing itself in the interlocked plurality of modes. Thus concrete fact is process. Its primary analysis is into underlying activity of prehension and into realized prehensive events.

The passages just quoted bear ample evidence of Whitehead's recognition of the similarity between his system of metaphysics and that of Spinoza. It shall be my purpose in what follows to make explicit just wherein the relation between their schemes of thought lies and what constitutes their fundamental differences. The main thesis I shall try to maintain is that there is a conflict of philosophical traditions at the basis of the metaphysics of Spinoza and Whitehead, and that all the problems of Spinoza's metaphysics recur in Whitehead's works in a more acute form. With this object in mind I think it best to select for discussion those concepts of Spinoza's thought to which Whitehead has drawn attention.

The substance of Spinoza is also God or the most perfect being. The infinite substance or God is allowed a final 'eminent' reality beyond that of the finite modes or accidents. The principle upon which this reasoning is based is that of the inseparability of perfection and reality—a doctrine which identifies Spinoza with all the other philosophers of the Great Tradition. I suggest that all

[1] This paper was read in its present form at a session of the Philosophical Conference held at the University of Toronto in the fall of 1935. The section on Spinoza is based on a larger study to be entitled *The Conflict of Traditions in the Philosophy of Spinoza.*

of Spinoza's proofs of the existence of God can be expressed in two brief theses: First, existence is an attribute of the essence of a most perfect being—which is his definition of *'causa sui'* and a doctrine he held in common with St. Anselm. Second, perfection determines existence, or more elaborately, perfection is prior in reality to being and is that which determines the actual existence of being. Hence if anything exists, the most perfect or infinitely perfect being exists. The point I would make here is that both theses of Spinoza may be reduced to the single proposition that perfection (or value) and existence (reality) are inseparable.[2]

There is one very important implication of Spinoza's doctrine of perfection. If we say that quantity of perfection determines existence, it follows at once that an infinitely perfect being is most real. Another way of arriving at the same conclusion is by beginning with the notion that the attributes of a substance constitute its essence. From this it follows that the more attributes a substance has, the greater is its reality, and that hence a substance constituted by infinite attributes is most real. The common thesis of both arguments is that only an infinite substance or being is most real. The finite thing by the very fact of its finitude lacks being. This thought, I take it, is at the basis of Spinoza's dictum *Omnis determinatio negatio est* (1-8, schol. 1)—a phrase which is usually misinterpreted by commentators who begin the study of Spinoza with a Hegelian bias. It is not that any form or category of being involves its negate as Hegel would urge, but that a determinate form of being is by its very nature a limitation or negation of infinitely perfect being. In brief, the Spinozistic thesis is that the infinite is prior in nature to the finite.[3]

I have taken the space-time to elaborate this point because I regard it as constituting one of the fundamental differences between Spinoza and Whitehead, as indeed between all *philosophia perennis* and modern relationistic philosophies.[4] One direct implication of Whitehead's principle of the primacy of process is that value or perfection is not intrinsically bound up with the

[2] See my paper "Value and Reality in the Metaphysics of Spinoza" in this *Review* XLV 229.

[3] Professor Hallett in his *Aeternitas* has previously drawn attention to this point.

[4] I am indebted to Professor Sheldon of Yale for the use of this term.

nature of reality. Values, as exemplified in various temporal, finite forms of being, may emerge or evolve in time, but process as such, unlike Spinoza's substance, is not essentially constituted by value-attributes. In his *Adventures of Ideas* Whitehead has some explicit statements to this effect. He writes: "All realization is finite and there is no perfection which is the realization of all perfections" (330). And again (357):

> Every occasion is in its own nature finite. There is no totality which is the harmony of all perfections. Whatever is realized in any one occasion of experience necessarily excludes the unbounded welter of contrary possibilities. There are always others which might have been and are not. This finiteness is not the result of evil or of imperfection. It results from the fact that there are possibilities of harmony which either produce evil in point of realization or are incapable of such conjunction.

Here we see that Whitehead follows the Greek rather than the Hebrew-Christian tradition. For him, as for Plato and Aristotle, an actual event is that which has some definite form. The infinite is the formless, that which lacks all determination and therefore all actuality. Hence according to Whitehead there can be no infinitely perfect being who is the realization of all perfections. Perfection is something which can be attributed only to some finite form of being.

The reason for this fundamental difference between the Greeks and Whitehead on the one hand, and Spinoza and the Scholastics on the other, is their different conception of the nature of ultimate reality. For Spinoza the essence of substance consists not in a particular form but in its attributes. Hence the more attributes any substance has expressing its power and reality, the more perfect is that substance. Therefore the most perfect being or God is a being constituted by all or infinite attributes (1-9; 1-11). Infinity of being does not mean indeterminateness or lack of definite characteristics. Infinity means absolute fulness of being. In this respect the infinite of the Hebrew-Christian tradition differs from the infinite of the Greeks, the TO APEIRON or boundless of Plato, which is merely the indeterminate receptacle of forms of being but in itself lacks all causal efficacy or actuality. Whitehead, like Plato, conceives all being as dependent upon some finite form. It is the forms which limit the boundless and produce determinate being and order and harmony.

II

Before analysing further the idea of God in Spinoza and Whitehead, it may be best to make a few historical remarks about the nature of substance, in order to see our problems in their proper perspective.

The early Ionian philosophers asked themselves the question, what is nature made of? They gave various answers, each one choosing some substance from sense-experience which he imagined could be the source of all things, such as water, air, etc. The point I wish to note here is that, once we begin with the notion of substance as that which is the permanent substratum of all particular forms of being, we must conceive all particular things as in some way modes or modifications of that continuous substance and as having no independent existence apart from that substance.

Plato and Aristotle, as I interpret them, differed from the Ionian philosophers in that they were metaphysical dualists. They made a definite separation between the formal and the material principles of nature, and then were forced to make desperate, though unsuccessful, efforts to bring them together again as they appeared in nature. Plato conceived the realm of Forms or Ideas as somehow participating in the world of change or flux. If we follow the account of the *Timæus*, there were the forms or limits somehow limiting the boundless or unlimited. Aristotle too, in spite of his criticism of Plato for separating the forms from particular things, could not avoid this metaphysical bifurcation. Ultimately, for him, the highest form of being is God or Pure Form; lowest in the scale of being is Prime Matter (Hyle) which has a minimum of form.[5] Matter is that which has the potentiality for becoming all things; form is that which constitutes the essence or being of things. It is true that as regards particular things Aristotle insisted upon an inseparable union of form and matter and was opposed to the Platonic doctrine of universal forms. The point I wish to suggest here is that in the end Aristotle also, since he worked with the two ultimate principles of matter and form, could not overcome this fatal dualism.

The thought I wish to emphasize here is that the reason why both Plato and Aristotle insisted upon the distinction between mat-

[5] See *Metaphysica* 1072*a*, *b*.

ter and form is that they adopted the thesis of Parmenides, namely, that being must be unchanging and eternal. That which is ever in a state of becoming cannot be said to be. Hence they were opposed to the Heraclitean doctrine that all is flux. This also is why they rejected the tradition of the Ionian philosophers who maintained that there is one substance or stuff which serves as the substratum of all things. If in the observable world there is change and motion, substance also must be undergoing change; otherwise one is forced to say with Parmenides and Zeno that change or motion is an illusion of the senses. By maintaining the permanence of form as over against the passage of nature, Plato and Aristotle attempted, though unsuccessfully, to do justice to the demands of reason and experience.

III

This lesson, it appears, was not taken to heart by Spinoza and Whitehead; and this accounts for the essential ambiguity of their thought. Spinoza, as is well known, tried to overcome the dualism of Descartes by positing one substance constituted by the known attributes of extension and thought. From this it followed, as Spinoza himself realized, that all finite, perceptible things must be regarded ontologically as modes or modifications of that one infinite substance. But the perfection of an absolutely perfect substance demanded that it be actually and fully realized in all respects and not subject to temporal change and process; and this could not be the case if the infinite substance was the immediate ground or source of the modes. This I take to be the significance of those propositions of Spinoza's *Ethics* (Prop. 21-28, Bk. 1) where he demonstrates that "all things which follow from the absolute nature of any attribute of God must forever exist and must be infinite" (1-21); and concludes (1-28) that "an individual thing or a thing which is finite and has a determinate existence cannot exist nor be determined to action unless it be determined to existence and action by another cause which is also finite and has a determinate existence".

To overcome this difficulty, Spinoza resorts to various expedients. He summons the Neo-Platonists and the Cabbalists to his aid; and they inform him that if only he introduce a doctrine of

degrees of emanation all his difficulties will be solved. Hence appears the famous distinction between attributes, immediate infinite modes, mediate infinite modes, and finite modes (*Letter* 64 to Schuller: *Sh. Tr.* 1, ch. 9). The immediate modes which follow directly from the attributes are eternal, but those which are more remote from the divine source of perfection lack the potency or power of the divine substance and hence are subject to mutability. This argument failed to satisfy some of Spinoza's correspondents, and in modern times no commentator lets the opportunity go by without drawing the reader's attention to its shortcomings. The doctrine of emanation, which in Neo-Platonic literature usually goes along with degrees of being, is one which Spinoza cannot consistently adopt if he is to retain an essential monism in which all finite things are modes or modifications of the divine substance.

Spinoza, however, had a very resourceful mind and besides was learned in the philosophical traditions. Hence he reintroduced the Aristotelian distinction between form and matter—but, of course, like a discreet man, without using these precise terms. He preferred instead to employ the terminology of Francis Bacon and distinguished between *Natura Naturans* and *Natura Naturata* (*Sh. Tr.* 2, ch. 9; *Ethics* 1-29, schol.). For Bacon, *Natura Naturans,* the nature engendering nature, is the formal principle in things (*Aphorisms* II, 1, 2). *Natura Naturans* is the formal, universal law or structure immanent in things which determines their operations and properties. The particular thing, as we observe it in its relations to other things, is nothing but the effect, the ***natura naturata,*** or produced nature, which follows from the active universal principle within it. The formal principle immanent in things is eternal and immutable; but the particular things which are the effects of the latent form are subject to change in time. In Spinoza's treatise *On the Improvement of the Understanding* there occurs this passage (Wild Edition 39-40):

> The essences of particular mutable things are not to be gathered from their series or order of existence which would furnish us with nothing beyond their extrinsic denominations, their relations, or at most, their circumstances, all of which are very different from their inmost essence. This inmost essence must be sought solely from fixed and eternal things, and from the laws inscribed (so to speak) in those things as in their true codes, according to which all particular things take place and are ar-

> ranged. Nay, these mutable particular things depend so intimately and essentially upon the fixed things, that they cannot either be or be conceived without them. Whence these fixed and eternal things, though they are themselves particular, will nevertheless, owing to their presence and power everywhere, be to us as universals or genera of definitions of particular mutable things, and as the proximate causes of all things.

Now although there have not been wanting commentators who, when they read this passage, pointed out its similarity to the thought of Bacon, very few have tried to show the connection between this doctrine of forms and Spinoza's theory of *naturans* and *naturata*. Instead, learned but futile researches have been undertaken to trace the history of the term in Scholastic philosophy, which all end by showing that, although Spinoza uses a term occasionally found in Scholastic literature, he employs it in a different sense. Although the Scholastics at times spoke of God as *Natura Naturans*, they still regarded Him as a being who transcended nature, as the Creator of nature, whereas for Spinoza *Natura Naturans* is a principle immanent in nature. My thesis is that Spinoza simply adopted the Baconian use of the terms, but, unlike Bacon, he made of them metaphysical principles. God as *Natura Naturans* is simply the formal principle immanent in nature as a whole; *Natura Naturata*, the world of things which depend on God, does not differ substantially from Him. Within substance itself one is nevertheless forced to introduce the distinction between active and passive nature, so as to allow for a formal principle which is constant and is the source of order in the sense-objects which are always coming into being and ceasing to exist.

It should be remembered in this connection that the primacy of *Natura Naturans* implies that God or nature is to be conceived as a concrete, individual being of a definite, determinate nature. This means that God must ultimately be conceived as finite because, as we have shown, the formal and the finite are identical. An infinite form, as Plato and Aristotle truly saw, is a contradiction. Spinoza attempted to pass lightly over this difficulty by identifying God as constituted by His eternal, infinite attributes with *Natura Naturans* and the world of finite modes with *Natura Naturata*. Thus he writes (*Ethics* 1-29, schol.): "By *Natura*

Naturans we are to understand that which is in itself and is conceived through itself or those attributes of substance which express eternal and infinite essence". Now my contention is that the principle of *Natura Naturans* cannot be applied consistently to a substance whose essence is constituted by attributes. Two entirely contrary metaphysical theories as to the nature of substance are involved. Substance as constituted by attributes may be infinite and perfect, precisely because it lacks a formal, determining principle. Spinoza is forced to readopt the substance-attribute metaphysics because he wishes to retain his metaphysical monism. Logically, by introducing the concept of *Natura Naturans,* he has introduced a formal, relational principle which, considered by itself, apart from ***natura naturata,*** can no longer be spoken of as an actual substance qualified by attributes.

Furthermore, to add to the difficulties of the situation, Spinoza did not realize that his metaphysics was not at all consistent with his physics. He took over the mechanistic, Democritean physics of Galileo and Descartes. On this basis, the union of bodies is explained to be the result of the combination of atomic particles. Form becomes secondary; form is the result of the union of the physical particles, but in no way determines their formation. Although Descartes conceived nature as a continuum of extension, he continued to speak of particles and primary and secondary qualities as if the atomic physics still held. Since he held further that thought constituted a distinct substance, he conceived man as composed of a substantial soul and a mechanistic body and then was faced with the problem of the interaction of body and mind.

As regards Spinoza, the situation is more complex. In so far as he held to the doctrine that nature was one infinite substance, his individuals, as modes of that substance, had to be internally related to that substance, which determined their essence and existence. This step Spinoza refused to take. Instead he proceeded to separate the world of modes from the infinite substance. The perceptible world he, like Descartes, conceived as acting according to mechanistic laws. Furthermore, on the basis of his Baconian theory of forms, *Natura Naturans* should have been the formal, determining principle of nature as a whole. Instead we find that the

form of nature is something secondary and derivative depending upon the combination of individual things. Spinoza's doctrine of the world conceived from the standpoint of physics is best illustrated by the following passage (2-lemma 7 preceding prop. 14):

> If we now consider an individual of another kind composed of many individuals of diverse natures we shall discover that it may be affected in many other ways, its nature nevertheless being preserved. For since each of its parts is composed of a number of bodies, each part without any change of its nature can move more slowly or more quickly and consequently can communicate its motion more quickly or more slowly to the rest. If we now imagine a third kind of individual composed of these of the second kind, we shall discover that it can be affected in many other ways without any change of form. Thus if we advance ad infinitum we may easily conceive the whole of nature to be one individual, whose parts, that is to say, all bodies, differ in infinite ways without any change of the whole individual.

Here we see that nature, conceived as an individual, is such as a result of the communication of parts in motion in a definite ratio of motion and rest. The parts are not conceived as internally or necessarily related to one another, and the form of the whole in no way determines the action of the parts. I submit that such a physical theory is not consistent with a metaphysics which gives the primacy to the formal principle, nor is it consistent with a monistic theory in which all nature is a continuum of changeless substance.

IV

We turn now to a similar analysis of Whitehead's metaphysics. The general thesis I shall try to maintain is that all the difficulties of Spinoza's metaphysics recur in Whitehead's works in a more aggravated form. Let us consider:

Throughout all his work Whitehead repeats and repeats the lesson that as a result of modern physics we must no longer conceive of nature as constituted by inert, static substances. The electrical theory of matter is that matter is essentially an activity, quanta of energy. The notion of an inert substance qualified by attributes must be abandoned and in its place we must substitute process or series of occasions and events. Whitehead expresses this doctrine clearly and briefly in his pamphlet, *Nature and Life*, where he says: "Matter has been identified with energy and energy is activity; the passive substratum composed of self-identical

enduring bits of matter has been abandoned". He is careful to point out that we must not commit the fallacy of 'simple location' by regarding any bit of energy in isolation from its environment. To quote again: "In the modern concept the group of agitations which we term matter is fused into its environment. There is no possibility of a detached, self-contained local existence. The environment enters into the nature of each thing."

The question now occurs, What is the relation between the individual forms of energy and the cosmic activity which constitutes their environment? Is Process in any way to be conceived as a unity? Is it prior to the events? It seems to me that Whitehead, like Bergson, in spite of his repeated criticisms of the category of substance is forced to reintroduce it under another name. For him the ultimate substrate of things is energy of some sort. Process or energy is that whose nature it is to act—just as Descartes conceived the soul as that whose nature it is to think and therefore held that the soul thinks always. In his *Science and the Modern World* (102-3) Whitehead states his position clearly: "In the analogy with Spinoza his one substance is for me the one underlying activity of realization individualizing itself in an interlocked plurality of modes.—Each event is an individual matter of fact issuing from an individualizing of the substrate activity." Here we see clearly that Whitehead, like Spinoza, postulates one fundamental substrate of which all things are modes, but he identifies this substrate with activity.

The main reasons for Whitehead's rejection of the category of substance are two:

First, there is the argument from Logic and Mathematics which he holds in common with Bertrand Russell. Throughout all his works Whitehead makes it very obvious that he is opposed to a substance-attribute metaphysics and to a subject-predicate logic. Instead he urges that philosophy should be based on a logic which gives the primacy to relations or structure and not to the terms or subjects. Similarly in metaphysics the ultimate principle must be a relational activity and not some underlying static substance. He believes that some such entity as process, change, or becoming, is the ultimate reality which serves as the bond of relation between the various events or occasions which emerge in time from the cosmic process. Just as in logic it is the relational form of the

proposition which determines the truth-function of the variable term, so in metaphysics, process or creativity is the relational principle which constitutes reality as one continuum.

Secondly, there is the Bergsonian argument from Intuition and the Theory of Creative Evolution. Bergson in his *Introduction to Metaphysics* and *Creative Evolution* reveals to us most clearly the fundamental presupposition of modern relationistic philosophy. Becoming, he argues, is more intelligible than being. This, he claims, can be shown if we bear in mind the phenomenon of motion. Movement is not the series of static positions of things. It is essentially a certain duration of flux. This duration can be analysed for the purposes of action into a series of stages or positions, but motion cannot be reconstructed through a series of static positions. When one attempts to do so he becomes involved in all the paradoxes of Zeno. Similarly from Becoming or Process we can by abstraction derive various static forms of being. But from the notion of being one cannot derive the notion of becoming. In this respect, Bergson and Whitehead maintain, all philosophies of the past have been misled by the Aristotelian subject-predicate logic and by the consequent substance-attribute metaphysics.

As said, the doctrine of the primacy of becoming over being depends upon the assumption that becoming is more intelligible than being. This, I wish to urge, is a fallacious assumption. There is more, I should say, to active being than to static being, there is more to a body in motion than to a body in a series of static positions; but process or activity apart from a being or substance to which it may be attributed is essentially unintelligible. It seems to me that Whitehead's remark in his *Nature and Life* that "It is always possible to work one's self into a state of complete contentment with an ultimate irrationality" is well illustrated in the case of Relationistic philosophers.

The compatibility of the category of substance with the category of activity is best demonstrated by the philosophy of Leibniz, whose influence Whitehead acknowledges. Leibniz, it will be recalled, was opposed to the Cartesian-Spinozistic conception of a continuous extended substance. Extension by nature was divisible and hence, he claimed, substance as extended was not really one. Instead he conceived a theory of monads or individual substances which were centres of activity. The activity of the monad or unit

consisted in its perception or representation of the universe of other monads. Monads differ from one another in the qualities of their perceptions. There are degrees of activity. Perception is the lowest form of activity and does not involve consciousness. It corresponds to one's state when he is in a swoon or deep sleep. Apperception involves consciousness or reflective knowledge of these inner states and is characteristic of souls. Briefly put, the following points are important in this connection. First, the ultimate constituents of reality are individual substances whose essence consists in the character of their experience. Second, one monad has nothing in common with another and cannot affect that other. This is what Leibniz means by saying that all monads are windowless. Third, each monad experiences or represents the rest of the universe as a result of the preëstablished harmony arranged by God. Fourth, space or extension is not a substantial or real attribute of a monad; it is only a phenomenal relation between substances. Fifth, all nature is essentially alive though in varying degrees. Sixth, each monad is internally determined.

If now we examine the writings of Whitehead we find certain marked similarities. In his *Concept of Nature* he agrees with Leibniz that space is not an attribute of reality, but only a relation between events. Secondly, he agrees that the ultimate subjective or formal nature of each event consists in the enjoyment of some experience, though he defines experience differently. Of course, there are some important differences between them. Whitehead is opposed to a theory of pluralistic substances such as Leibniz maintains; he conceives the Leibnizian monads as events or modes of a more ultimate Spinozistic substance. Furthermore, he is opposed to the substance-attribute view implied in Leibniz's doctrine that the monads are substances to which discernible differences of activity or quality are attributed. He is opposed to a 'windowless' theory of substance such that there is no interaction between things. Whitehead's variations seem to consist, first, in postulating internal relations between various actual events instead of internal relations between the various experiences of one entity. Thus he avoids the doctrine of a preëstablished harmony and at the same time agrees with Leibniz that each event, on account of its internal relations, mirrors the whole universe. Secondly, according to Whitehead, the actual occasions have no substantial

existence of their own; they are modes or effects of cosmic process or creativity. In this manner he is interpreting the Leibnizian monads in a Spinozistic fashion; he retains the doctrine of Leibniz that the nature of things consists in their activity or experience, but like Spinoza he refuses to give individual things a substantial existence of their own. Whitehead himself summarizes his position clearly in *Process and Reality* (pt. 2, ch. 2, p. 124):

> This is a theory of monads, but it differs from Leibniz's in that his monads change. In the organic theory they merely become. Each monadic creature is a mode of the process of 'feeling' the world, of housing the world in one unit of complex feeling in every way determinate. Such a unit is an actual occasion—it is the ultimate creature derivative from the creative process.

I suggested in the preceding paragraph that Whitehead is interpreting the Leibnizian monads in Spinozistic fashion. The same point can be made by saying that Whitehead's system approximates a form of the Indian Upanishidic philosophy. He himself makes this suggestion in his *Process and Reality* (11) where he says:

> In monistic philosophies Spinoza's or absolute idealism, this ultimate is God, who is also equivalently termed 'The Absolute'. In such monistic schemes the ultimate is illegitimately allowed a final 'eminent' reality beyond that ascribed to any of its accidents. In this general position the philosophy of organism seems to approximate more to some strains of Indian or Chinese thought than to Western Asiatic or European thought. One side makes process ultimate; the other side makes fact ultimate.

The connection between the Indian conception of the ultimate nature of process and Whitehead's theory is very close. In both there is the doctrine that the ultimate substrate of things is indeterminate activity or process, from which the world of finite, temporal forms emerges. For both this ultimate process is essentially qualitative experiential feeling or subjective enjoyment without representation or consciousness; experience is said to be prior to consciousness. One might also say that the theory of cosmic, indeterminate experience is akin to one of Leibniz's lowgrade monads but conceived as a boundless, infinite continuum after the fashion of the Platonic space of the *Timæus*.[6] Whitehead, however, differs from the Indian sages in insisting with the Greeks

[6] In his *Science and First Principles* Professor Northrop has developed the theory that the Platonic space of the *Timæus* is identical with the indeterminate boundless of Oriental philosophy. This point of view enables one to gain insight into Whitehead's doctrine.

that loss of finite, actual individuality is a real loss, not a gain; that the individual attains his perfection by achieving some harmonious form of being and thereby extricating himself from the indeterminacy of pure experience.

V

At this point the problem which the Ionian philosophers and Spinoza faced recurs. If we begin with infinite, indeterminate experience, how shall we account for the origin of change and differentiation into finite modes? In Whitehead's system the problem is more acute than in Spinoza's because the latter at least started with an actual determinate substance with power of activity to modify itself into various finite modes. But Whitehead's ultimate substrate is indeterminate potentiality or feeling, lacking any actual powers and characteristics. How is one to derive actuality from potentiality? Aristotle postulated a pure form or actuality, which he also designates as Prime Mover, because he was convinced that potentiality was intelligible only in relation to a prior actuality.[7] This too is the common assumption of Maimonides, St. Thomas, and Spinoza. The reason why Spinoza takes such pains to prove the existence of an absolutely infinite, perfect substance is because he assumes that all becoming or process, all modes that become in time, can be rendered intelligible only by conceiving some infinitely perfect being of which they are the effects. In brief, the less real or perfect is to be explained by the more real or perfect. Whitehead, however, in common with Bergson and S. Alexander, has to explain the origin of the actual from the potential. I suggest here that he can do so only by endowing the potential with attributes which can consistently be attributed only to something actual. This is shown by the fact that Whitehead endows Process or Creativity with an urge or Eros to realize itself. He thus introduces into the cosmic process the principle of appetition or endeavor which characterized Leibniz's monads. A typical passage illustrating this thought occurs in *Adventures of Ideas* (357): "We must conceive the divine Eros as the active entertainment of all ideas with the urge to their finite realization each in its due season. Thus a process must be inherent in God's nature whereby his infinity is acquiring realization." I conclude from the

[7] See *Metaphysica* 1049*b*.

above quotation that Whitehead endeavors to derive the actual from the potential by attributing to process an eros or urge to realize all possibilities. This, it seems to me, is to endow process with attributes which it cannot have in so far as it is mere indeterminate potentiality. To say as Miss Emmet does in her book *Whitehead's Philosophy of Organism* (248) that "in the last resort action can do anything that it must do in order for there to be anything at all", is to give up any claim to rational interpretation and explanation of the nature of reality.

Whitehead himself is implicitly aware of the unsatisfactoriness of his position. Nature exhibits not only process but also constancy. According to the *Concept of Nature*, there are universal forms of being which appear or are situated in the ephemeral events; *e.g.*, Cambridge blue may be situated in many events, but the blue does not change with the events. These universals Whitehead later calls "eternal objects". The point here is that he realizes that one cannot derive these eternal objects from the mere notion of creativity or process.

Thus Whitehead like Spinoza is forced by the problem of the relation of permanence and change to revise his conception of the nature of God. Like Spinoza he comes to maintain that God must be conceived as a purely formal principle, rather than as a substrate of events. God is then conceived by him as the "Principle of Concretion", as that in virtue of which the eternal objects or pure possibilities are brought into relation with actual events so that they become relevant to one another. God so conceived is a purely formal, relating principle which makes the eternal objects and events grow together (concrescence). He does not create or produce eternal objects and events. He also serves as a limiting principle, limiting the number of possibles from among the infinite many which can be actually realized. By this limitation God introduces values into the world. The points here indicated are clearly stated by Whitehead in the following passages. In *Science and the Modern World* (257) he writes: "God is the ultimate limitation and His existence is the ultimate irrationality. For no reason can be given for just that limitation which it stands in his nature to impose." And again (258): "If He be conceived as the supreme ground for limitation, it stands in his very nature to divide the good from the evil". So in *Process and Reality* (522): "By reason

of this primordial actuality [of God] there is an order in the relevance of eternal objects to the process of creation".

In so far as God is the principle of concretion, He is, like the *Natura Naturans* of Spinoza, a purely formal principle and not at all a substance or substrate underlying its modes. It seems to me that Whitehead commits the same error as Spinoza in continuing to attribute to God, considered purely as a formal principle, attributes which could only pertain to Him if He were a substance. This explains why Whitehead proceeds to speak of God himself as an accident or emergent of the general activity. Thus in *Process and Reality* (11) we find the arresting statement: "In the philosophy of organism, this ultimate is termed creativity and God is its primordial non-temporal accident". And again (*P.R.* 135): "This is the conception of God according to which He is considered as the outcome of creativity, as the foundation of order and as the goal towards novelty". These passages may serve as sufficient indication that Whitehead is attempting to combine the notion of God as a principle of order or concretion, with God as in some sense identical with ultimate creativity or substantial activity. To solve this difficulty he conceives of God as an emergent or mode of creativity, Who then proceeds to act as principle of concretion.

The difficulties of Spinoza's theory are slight as compared to those of Whitehead. Spinoza, at least, was always dealing with the actual. God, whether as consisting of infinite attributes or as *Natura Naturans,* was always actual. Whitehead, however, has two realms, the potential and the actual, and is faced with the problem of deriving the one from the other. On the level of the potential he endows process or creativity with the conative urge to realize itself. Then, as this is not sufficient to account for the facts, he adds a principle of concretion to synthesize and limit the eternal objects and the actual events, if and when the latter do emerge. Whitehead is consistent enough to realize that God identified with process or creativity, and God as principle of concretion, are still merely potential and not anything actual. Hence he proceeds to evolve an actual God Who will be not merely "primordial" but also "consequent". Let us see how he attempts to accomplish this feat.

As said, Whitehead does not wish to confuse the actual with the potential. God, as primordial, shares the nature of the poten-

tial, in that, though actual, He is not fully actual; He is "deficiently actual". He has only conceptual "luring" feelings, not physical feelings (*P.R.* 522). In the fulness of time God too becomes actual, but He is dependent upon the activity of the actual occasions. When eternal objects become realized in actual events as a result of the coöperation of God considered in His primordial nature, then they also exist as ideas in the mind of God. As a consequence of the realization of the eternal possibilities, the potential nature of God becomes realized too. This can be understood in two ways: First, the Divine Being acquires a consequent nature because the indeterminate, boundless activity takes on a definite, determinate character as a result of the self-creative function of the interrelated events. Secondly, from the point of view of God as the principle of concretion, we can say that God is conscious of the actual interrelation between the various objects of nature considered as a unity. He is, so to speak, the actual order of nature, whereas in His primordial nature He was simply the necessary condition or source of order. Furthermore, in the passage of nature, events endure for a limited time or epoch and then cease to be. But in perishing each event enjoys an "objective immortality" because it constitutes a part of the eternal nature of the consequent character of God. In this sense God is the home of values. Typical passages illustrating Whitehead's conception of the dual nature of God are the following from *Process and Reality*.

> Thus analogously to all actual entities, the nature of God is dipolar. He has a primordial nature and a consequent nature. The consequent nature of God is conscious, and it is the realization of the actual world in the unity of His nature, and through the transformation of His wisdom. The primordial nature is conceptual, the consequent nature is the weaving of God's physical feelings upon His primordial concepts (524).
>
> Thus by reason of the relativity of all things, there is a reaction of the world on God. The completion of God's nature into a fulness of physical feelings is derived from the objectification of the world in God. He shares with every new creature its actual world; and the concrescent creature is objectified in God as a novel element in God's objectification of that actual world (523).

By a long and devious route Whitehead has finally arrived at the stage where Spinoza and the classical philosophers began; but, so far as I can see, his actual or consequent God has no causal efficacy. He serves as a sort of reservoir of values and past

objectives, and is a symbol of human aspirations. In his eagerness to preserve the autonomy and freedom of the individual, Whitehead has relegated his God to a secondary position.[8] What is done on earth is registered in heaven, but earth is primary. Whitehead's attitude is clearly shown in *Process and Reality*.

> The sheer force of things lies in the intermediate physical process; this is the energy of physical production. God's role is not the combat of productive force with productive force, of destructive force with destructive force; it lies in the patient operation of the over-powering rationality of His conceptual harmonization. He does not create the world, He saves it; or, more accurately, He is the poet of the world, with tender patience leading it by his vision of truth, beauty and goodness (525-526).

In order to guarantee the freedom of the individual, Whitehead conceives of God as acting simply by persuasion and as exerting no force. As primordial, God is simply an unconscious urge imparted to the occasions; as consequent, He is the conscious object of desire. Thus we receive back again the Unmoved Mover of Aristotle's psychology, though the Unmoved Mover of the Aristotelian physics and biology is rejected.

Briefly put, the reasons for the inadequacy of Whitehead's system are two. First, he attempts to derive the actual from the potential. This I regard as intrinsically impossible and unintelligible. Secondly, he is trying to combine a monistic metaphysics with a pluralistic theory of physics and biology—a fallacy similar to that of Spinoza. Instead of offering us any solution of the perennial problem of the one and the many, he merely restates the difficulties in a more ambiguous and aggravated form. He wishes to retain a monistic substrate and also to keep the independence of the individual events and their self-creativeness. At one time he gives the primacy to God and calls the individuals modes of

[8] It is instructive to note in this connection that Spinoza is more oriental in his conception of freedom than is Whitehead. Spinoza takes determinism seriously; the law of cause and effect, the law of Karma, holds with inexorable necessity among the modes; and there is also a necessary connection in the dependence of the modes upon ultimate substance. Freedom, in the last analysis, consists in identifying oneself with the eternal source of all value and being (4-28). Spinoza, however, differs from the orientals in that this identification is the result of an intellectual love of God, and does not involve an ecstatic state of spiritual intoxication wherein there is loss of self-consciousness. Whitehead, on the other hand, is anxious to preserve the freedom of the individual apart from any reference to the ultimate substrate. Every occasion gives birth to some novelty; there is an indeterminism about each actual occasion and about God. No ground or reason can be given for the creative activity of God or the events.

His activity; at other times he gives the primacy to the nexus of events and conceives of God as an accident derived from the process.[9] It seems to me that he actually has a vicious bifurcation between his fundamental principles, though he tries vainly to reassure us that he does not mean to introduce any real dualism or bifurcation.

The positive theses to be derived from this paper are two. First, an ultimately intelligible theory of metaphysics must begin with the primacy of the actual, as Aristotle, the Scholastics and Spinoza insisted.[10] Secondly, a metaphysics which is to do justice to the problems of the one and the many, permanence and change, eternity and time, must in the last analysis be some form of dualism. There must be some eternal principle of being over against the world of events. This was the great insight of Plato and Aristotle and the failure to appreciate that insight accounts for the mutual difficulties of Spinoza and Whitehead. Just precisely how these two metaphysical principles are to be harmonized is still the task of future philosophy.

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[9] Although Whitehead in his *Science and the Modern World* emphasizes the organic character of his philosophy and its close relation to the monism of Spinoza, yet in his *Process and Reality* he has a tendency to go to the opposite extreme. It is surprising to find him saying (114): "Thus the philosophy of organism is pluralistic in contrast with Spinoza's monism". In his anxiety to guarantee the autonomy and independence of the events, Whitehead tends to conceive them somewhat as temporal monads each of which is a '*causa sui*' (135). It is hard to see how this pluralism in the realm of physics and biology is consistent with his previously acknowledged metaphysical monism (*Sc. Mod. World* 99). Instead of having God, the ultimate metaphysical reality, explain the origin of events, he attempts to have the temporal events account for the origin of this eternal principle. This procedure renders his whole philosophy intrinsically unintelligible and goes contrary to all philosophy of the past. Whitehead's theory is simply a complex illustration of the problems of the one and the many, permanence and change, but in the last analysis solves none of them.

[10] I am much indebted to Professor Urban's *The Nature of the Intelligible World* for an appreciation of the notion of intrinsic intelligibility. Professor Urban has developed this thesis from an axiological point of view which presupposes Neo-Kantian categories. My thesis, however, is in agreement with common-sense Aristotelian and Scholastic doctrine. The main insight to be derived from a study of modern Relationistic philosophies and 'Philosophia Perennis' is that revolutions in philosophy accomplish as little as in the realm of politics. In the realm of the intellect as in the Commonwealth there results nothing but chaos and the destruction of sacred values and institutions. When in the process of time a less hysterical mood prevails, one comes to realize that certain categories of thought, certain principles of metaphysics, cannot be violated if we are to continue to live and think rationally.

THE SECOND INTERNATIONAL CONGRESS FOR THE UNITY OF SCIENCE

ALMOST from the beginning the Copenhagen Congress (June 21-26, 1936) was under the shadow of death; for during the morning session of the first regular day the news arrived that Moritz Schlick, beloved and forceful leader of 'right-wing' positivism, had been murdered at Vienna.

Jorgen Jorgensen, in his opening address, presented a brief historical sketch of logical positivism, in which he emphasized in particular the turn positivism has taken under the leadership of Neurath and Carnap. For a moment it seemed that 'left-wing' positivism might dominate the Second Congress. But the subsequent papers and discussions dispelled all such fears or hopes. In fact, the diversity of points of view obscured at times even the ultimate goal so pointedly expressed in the very name of the Congress.

The Second Congress for the Unity of Science was to deal primarily with the problem of causality. This theme, however, did not prevail; and the feeling was widespread that the organization of the Congress had not been all that might be desired. The optimists spoke of 'growing-pains'. But it is possible that the real trouble was much more fundamental and that its last ramifications will be found in the programmatic theme advocated by the movement sponsoring the congresses for the unity of science.

During the first morning session, Niels Bohr and Philipp Frank were to discuss the problem of causality in physics and biology.

Niels Bohr presented, in all essentials, views which he already expressed in an address delivered before the International Congress on Light-Therapy, Copenhagen, August 15, 1932, and which was subsequently published under the title *Light and Life.* In physics, Bohr maintained, the wave-picture and the corpuscle-picture are complementary descriptions of phenomena, and their complementarity symbolizes a fundamental limitation of cognition. The 'uncertainty' involved in this complementarity forces us to abandon classical theories. But we encounter another 'uncertainty' —in the realm of life. "In every experiment on living organisms there must remain some uncertainty as regards the physical conditions to which they are subjected, and the idea suggests itself that

the minimal freedom we must allow the organism will be just large enough to permit it, so to say, to hide its ultimate secrets from us. On this view, the very existence of life must in biology be considered as an elementary fact, just as in atomic physics the existence of the quantum of action has to be taken as a basic fact that cannot be derived from ordinary mechanical physics." For Bohr, this view does not "express any kind of scepticism"; but he does reject the physicalistic thesis of logical positivism, and he insists upon differentiating three types of laws: (1) The laws of classical mechanics, which presuppose an accurate description of the states of nature unaffected by observation. (2) The laws of quantum mechanics, which deal with phenomena that do suffer disturbances due to observation. And (3) the laws of biology. Since life depends upon the integrational processes known as metabolism, the laws of life, dealing with the functional whole of these processes, defy all description in terms of space and time alone. They differ therefore fundamentally from the laws of physics for which a description in space and time alone is adequate.

Philipp Frank urged essentially Carnap's thesis that misunderstandings can be eliminated and that the unity of science can be achieved only when all special 'languages' of the various sciences have been overcome. Our aim, therefore, must be the development of the one unitary language of science. As an example of the type of misunderstandings he was speaking about, Frank referred to the recent controversy between Einstein and Bohr, in which Einstein uses the term 'real' in the sense of naïve realism while Bohr shows that such terminology becomes meaningless when we deal with sub-atomic phenomena. Frank warned, furthermore, against all mystic interpretations of modern physics. Almost all classical theories, he said, have been regarded by some persons as disproving materialism; and quantum mechanics has suffered the same fate—though, of course, its conclusions prove nothing of the kind. Speaking of complementarity, Frank maintained that this term simply means that no experiment can be devised which permits the use of the complex expression 'place and momentum of a particle', although 'place' and 'momentum', taken by themselves, are unambiguous terms. As far as the problems of life are concerned, Frank said, we must strive to develop a generalized physics which is related to present-day quantum mechanics in very much

the same way in which quantum mechanics is related to classical theories. New and more general laws must be found of which the laws of physics now known to us are but special cases.

In the discussion, *Popper* showed that the difference between the views of Bohr and those of Frank lies in this: that Frank believes a generalized physics to be able to cope with the problems of life, whereas Bohr maintains that life is unique and cannot be dealt with in the manner in which we analyse inorganic matter.

J. B. S. Haldane, son of the famous bio-chemist and himself a distinguished geneticist, presented a paper entitled "The Analysis of Causality in Genetics". His main point was that all the differences in a population are due to the existence of different genotypes in different environments, and that these environments are not always uniformly beneficial or detrimental to the various genotypes. "The assertion, therefore, that race A is superior to race B is in general meaningless." In each case we must specify the genotype as well as the respective environment. An Englishman, for example, may have a better chance to survive in England than has a West African negro (tuberculosis!); but in West Africa the chances are probably reversed (yellow fever!). As 'hereditary' we can regard only those factors which remain constant in all environments. And the acceptance or rejection of Lamarckism depends on how long an environment must remain uniform in order to eliminate all variations due to it. This question must be decided empirically.

N. Rashevsky spoke about "The Physico-Mathematical Methods in Biological Sciences". To some extent his paper was a summary of material published at various times in *Philosophy of Science.* Rashevsky attempted "to develop mathematical biology as a rational theoretical science, according to patterns suggested by theoretical physics". His first concern was to develop a general physico-mathematical theory of metabolizing systems. He proceeded on the assumption that every metabolizing system is the seat of mechanical forces (osmotic pressure and intermolecular attractions), the possible effects of which can be calculated mathematically—at least in the case of certain simplified and idealized models. In many cases results were obtained which correspond closely to facts known from experimental investigations, especially of tumors.

V. F. Lenzen's paper was entitled "The Interaction of Subject and Object in Observation". His main point was that the partition between subject and object is not found at the same place in the various sciences. Thus the problem of the physicist ends when he reaches the surface of the organism. The biologist, however, places the partition into the body of the observer. Misunderstandings arise whenever it is not made clear where the partition is intended to be. Lenzen's references to certain epistemological problems were also of interest. The *subject* of observation he viewed 'behavioristically' as one of the things in the physical world. A 'thing' he defined as "a center of reference for perceptions", and as "an instrument of prediction and control of experiences". "A physical property has reality only at the moment of registration or observation." The criterion of physical reality, according to Lenzen, may therefore be stated thus: "A physical property is real if its observation can be predicted with certainty. And this means ultimately that we can predict the perceptions we shall encounter." In this way, we are told, "the 'independence' of the physical object as realism conceives it, has been transformed into 'predictability' for many observers". And hence, according to Lenzen, "the quantum-mechanical interpretation of the state of a microphysical system as an instrument of prediction finds its most congenial setting in positivism, according to which the thing is the class of its perceptible aspects, or perhaps the functional relation between them".

Popper, in his paper, on "Logik und Metalogik", gave a concise historical survey, covering the principal changes in the development of symbolic logic and stressing in particular the work of Tarski. He then discussed more specifically the different tasks of 'morphology' and 'semantics', respectively, and demonstrated Tarski's use of the term 'truth'. The conclusion which he ultimately reached was that Wittgenstein's thesis, according to which we cannot speak about a language, must be abandoned; for in meta-languages (and to some extent in the language itself) we can and do speak about a language. This means, in the last analysis, according to Popper, that a specifically *philosophical* language is needed in order to discuss in *it* the problems arising in connection with the languages of the sciences.

Edgar Rubin, speaking on "My own Mind and Other People's Minds", pointed out that in our every-day life the strict separation

of body and mind is often unknown. Only the science of psychology hypostatizes the one side of a complex 'given' into a *body*, and the other side into a *mind*. What we actually find in every-day life are 'psychoidal' complexities in which the bodily aspect cannot be separated from the non-bodily aspect. Such 'psychoidal' complexities are, for example, 'actions' and 'statements' (*Aussagen*). Even printed sentences are 'psychoidal'; for *"im Gedruckten sind Gedanken"*. Now behind the 'actions' and other 'psychoidal' complexities we must assume special 'capacities'; and these we attribute to human beings. In this way we escape behaviorism and can know a great deal about "other people's minds".

Otto Neurath, in a paper entitled *"Soziologische Prognosen"*, maintained that—if viewed from the point of view of sociology—all formulæ of physics appear to be descriptions of historically conditioned phenomena. The systems of propositions we call physics and chemistry are therefore systems of historical propositions. If this point of view be accepted, Neurath argued, the unity of extrapolation in sociology and physics is assured—though, of course, differences of degree still remain. And there is also one fundamental difference. In sociology a complete prediction would in some cases mean the creation of the thing 'predicted'. For example, if in the year 1800 somebody had predicted that in 1905 a special theory of relativity, containing such and such formulæ, would be proposed, this prediction, if complete in every detail, would have been equivalent to the creation of that theory—and would thus have been impossible as a 'prediction'.

John M. Somerville discussed "Scientific Empiricism and the Problem of Causality in Social Science", maintaining that unless we "come to grips with social science" the unity of science must remain an unsolved problem. But one fundamental difference exists between the natural and the social sciences: "The problem of causation in natural science is a problem of the real meaning, the correct interpretation of the manifold results already produced in terms of that concept. But the problem of causation in social science is the problem not of interpreting results, but of whether results can be produced in terms of this concept". Somerville also insisted upon a distinction between the problem of causation within *historical* social science and within *analytical* social science. But all these differences, he argued, are not sufficient to obscure the

organic unity of all sciences—a unity to be found in the criteria, the method, and the language of science.

Moritz Schlick's paper, dealing with "Quantentheorie und Erkennbarkeit der Natur", read by Philipp Frank, was one of the high points of the Congress. Schlick argued as follows: To know nature means to be able to formulate laws of nature. A law of nature is a formula which makes possible the prediction of events. Hence nature can be known exactly so far as it is possible to make valid predictions concerning its behavior. Quantum mechanics, however, restricts in a very definite manner the possibility of predicting physical events; for it shows that the exact calculation of future events is not only practically but theoretically impossible. Bohr has made the suggestion that we must perhaps abandon all hope of understanding completely the psychophysical relations and laws of living substance; and it seems that here another limitation of our ability to comprehend nature is being encountered. But what can such an assertion possibly mean? In particular, what is the meaning of '*Unerkennbarkeit*' in this connection? To begin with, the 'unknowability' of nature implied in quantum mechanics differs fundamentally from that of the 'unknowableness' of Kant's things in themselves; for it does not imply a limitation of the human faculty of cognition, but expresses an objectively existing property of nature. The laws of quantum mechanics give a complete and exhaustive description of nature in the sense that, in principle, they say *everything* that can be said about any process of nature in any language whatsoever. The boundary of 'knowability' is here at the same time the boundary of the 'orderliness' (*Gesetzmässigkeit*) of nature. In physics it is meaningless to speak about factors which are unknowable in principle. To maintain that a state of reality is in some respects objectively 'undetermined' can mean only that certain propositions concerning this state are neither true nor false, but *meaningless*. And this means that the words contained in such propositions cannot be used in a description of that state. The meaning of Heisenberg's 'uncertainty-relation' is therefore simply this: the concepts 'place' and 'momentum' cannot be applied together to the particle. Schlick then applied this line of reasoning to the problems of life. To begin with, he pointed out, as long as we do not possess a definition which clearly indicates in what respects life differs from the

inorganic, we do not have a clear and definite question before us and the relation to quantum mechanics cannot even be discussed. But it is the task of science to find that system of formulæ which will enable us to predict as exactly as can be desired the future behavior of an organism. Either such a system of formulæ does exist—and then it can be discovered in the manner of all empirical sciences; or it does not exist—this would mean that there exists no 'orderliness'; but it would not mean that an existing 'orderliness' will remain eternally unknown to us. From this point of view it appears nonsensical to speak of an *'Unerkennbarkeit'* of the processes of life. The boundary of knowledge is to be found only where there is nothing left with which cognition could be concerned.

F. Gonseth, reading a paper concerning "The Idea of Natural Law", argued that the conception of 'necessity' in the old sense leads to various paradoxes in microphysics as well as in macrophysics. In order to eliminate these paradoxes, Gonseth maintained, we must reject the strict separation of reality and theory and must adopt an axiomatic method, *"nouveau style"*. But just what this new axiomatic method might be was not made clear in the paper presented. Gonseth's recent book gives some details.

Of general interest were the brief comments made by the representatives of the School of Upsala, *Tegen,* and *Marc-Wogau.* The Upsala School, represented in the literary field through the periodical *Theoria,* seems to be interested chiefly in the analysis of concepts in a somewhat traditional manner, and is vigorously opposed to logical positivism. The contribution of the Upsala School to the discussion of causality may be seen in Marc-Wogau's argument that if the causal relation is expressed in a law, then predictability does not belong to the causal relation as such but is at best only an expression of the constancy of this relationship.

Paul Hertz, speaking on *"Regelmässigkeit, Kausalität, Zeitrichtung"*, presented a critical commentary upon views which Reichenbach expressed about ten years ago. Reichenbach's main thesis, however, remained unchallenged and the criticisms pertained only to minor phases of his argument.

R. C. Tolman's paper, "An Operational Analysis of Motives", was read by Lenzen. Tolman's motto was: "Rat's, not men. Gross behavior, not verbal reports." And under this motto he developed

a number of formulæ descriptive in schematized form of simplified types of behavior. The basic formula, $B = f(M, S, H, T, A)$, shows behavior (B) to be a (not further specified) function (f) of 'maintenance schedules' (M), 'environmental stimulus-objects' (S), 'heredity' (H), 'previous training' (T), and 'age' (A).

Carl G. Hempel, demonstrating "Eine rein topologische Form nicht-aristotelischer Logik", showed that certain formulæ can be derived when we assume, not that certain variables have a truth-value 0, ½, or 1, but that a 'pair of propositions' (or of hypotheses') *precedes* another such pair, *occupies the same place* as the latter, or *follows* it. Many of the formulæ thus derived turn out to be equivalent to some of the basic formulæ of three- and more-valued logic. An empirical application of the topological formulæ is not anticipated, since all interpretations of them can be given only in terms of some other calculus.

Sigismond Zawirsky presented "Anwendungen mehrwertiger Logik". For instance, the dualism of the wave-picture and the corpuscle-picture, as we find it in modern quantum mechanics, can be stated in terms of a three-valued logic—provided we interpret this dualism as a strict contradiction: p, $-p$. We obtain the formula

$$[q \supset (p \equiv -p)] \supset -q.$$

In our two-valued logic this formula is a tautology and implies that quantum mechanics (q) is false. In a three-valued logic, however, the formula is not a tautology and simply means that the wave-picture as well as the corpuscle-picture is *possible.* (Similar considerations may be found in Bell, E. T., *The Search for Truth.*)

Marcel Boll's paper, dealing with "Determinisme, contingence et fatalité en psychologie", led to the conclusion that free will is but the subjective aspect under which the fatalism of certain facts and the determinism of the laws of nature present themselves spontaneously to us. Experimental psychology can investigate, not free will as such, but only why to some people the results of quantum mechanics, for example, constitute a vindication of their illusion of free will.

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DISCUSSION

PERSONAL REALISM

THE comparatively concurrent rise of such philosophical *nuances,* if they may be called such, as New-Realism, Phenomenology, Organicism, and Emergent Evolution, together with recent developments in Value-Philosophy and Personalism, is pointing the way to an Ontology whose basic principle may be termed *Reality-Organization.*[1] For it is becoming increasingly evident that the realm of Reality can be rightly evaluated and dealt with only as an essential hierarchy, with forms, levels, and graduations determined by relation to a supreme reality—attested as such by virtue of its ability to organize and unite the whole—Personality.[2]

I

According to this principle, Reality may be organized either as Reality-Levels, or as Reality-Forms. A tentative organization of this kind may be roughly outlined in the following tables, in which reality-degrees are indicated by position in a descending scale.[3]

Reality-Levels	*Reality-Forms*
Persons	Personality
Intelligent Organisms	Value-Forms
Conscious Organisms	Categories
Unconscious Organisms	Concepts
Inorganic Entities	Essences[4]
	Percepts

The question how the two tables are related to one another cannot be undertaken here, our objective being confined to an attempt to interpret and justify the meaning and order of the Reality-Forms as designated.

II

1. The chief and determining Real, as already summarily claimed, is Personality. The reasons for regarding Personality as such are in

[1] William James contemplated something of the sort, writing in his posthumously published volume *Some Problems of Philosophy:* "Philosophy must thus recognize many realms of reality which mutually interpenetrate" (102).

[2] Personality, rather than Mind, since it includes emotion and will.

[3] The tables indicate the ***order*** of the Levels and Forms, but not the proportionate *degrees* of reality between and within them. The distance in degree of reality, *e.g.,* between Persons and Intelligent Organisms and between Value-Forms and Categories, is much greater than that between any of the several levels and forms beneath them.

[4] Categories, concepts, in fact all 'ideas', are *essences,* or subsistencies. The term is employed here only in a restricted sense, as will be explained later.

brief: (1) the possession of selfconsciousness, the unique ability to be both subject and object, (2) the power of unifying experience through thought, (3) the exercise of freedom (however limited), and (4) the power to achieve moral character, or potential worth. These qualities make personality the indubitably constitutive and supreme real.

2. Next to persons in reality-rank are the Eternal Value-Forms: (1) Moral-Value, or the Good,[5] (2) Validity-Value, or the True, and (3) Aesthetic-Value, or the Beautiful.

This reaffirmation of the primacy of Plato's eternal forms—centering, as he so emphatically insisted, *in the Good*—has no other justification than that of an intuitive consensus, and needs no other. Plato's theory, that whatever, or whoever, is good or true or beautiful *becomes* such by *participation* in one of these Forms, leaves them however too static and inert. Voluntarism, which rightly claims so large a place in Modern Philosophy, has revealed the Value-Forms not as mere static entities but as actively communicative Reals; but only as unified by Eternal Reason and operative through the Supreme Will, for nothing less than Personality can be consciously (and thus genuinely) communicative, or self-imparting.[6]

3. Next below the Value-Forms come the *Interpretive Forms*, or Categories, by means of which minds reduce the complex of experience to rational significance and unity.

4. Less structural than Categories, but coördinate in their rise and equally essential to knowledge, are *Concepts* of various degrees and kinds.

5. *Essences*, regarded as an order of concepts or subsistencies, are the reals by means of which sensation-events (*sensa*) are integrated into the realm of the understanding and of value. Here belong those every-day intentional, conative, and pragmatical essences which Phenomenology, Organicism, and Pragmatic Conceptualism[7] have rescued from the mediocrity of mere Empiricism, and the chaos of undifferentiated sensations and feelings, and given universality and significance.

6. *Percepts*, phenomena viewed as happenings (point-events), are reals, yet even when relatively permanent (*e.g.*, stars or mountains),

[5] Under the Good are to be subsumed the several virtues which constitute character. Each of these has an *apriori*, self-existent, value-reality—as N. Hartmann demonstrates in his *Ethics*—yet not in themselves, apart from persons.

[6] It is only as *Ideals* as well as Reals, of worth to developing persons, that the Value-Forms can occupy so high a place in the realm of Reality. No one would die for Truth unless this meant to die in order to secure, or maintain, an essential value for persons. When the Value-Forms are thus seen in their relation to Personality they necessitate a Being who is not only the *Final Cause* of Aristotle but also the Self-imparting *God of Grace* of Christianity. The Disvalues—Evil, Falsity, Ugliness—also have reality, but only as the subordinate sub-creations of finite minds and wills socialized and erected into opposition to the Eternal Values.

[7] *Cf.* C. I. Lewis, *Mind and the World Order.*

are to be regarded as less real than the minds that perceive them and the categories, concepts, and essences, through which they are apprehended.[8]

The urgent need for such a series of Reality-Forms is that otherwise one has either, with Extreme Personalism, a theory of Reality consisting only of persons with no adequate recognition of the reality of a stable system of thought-forms constituting a framework for their intercourse;[9] or, with Realism, an objective world in which persons are subordinate to phenomena; or, with Empiricism, a mere congeries or succession of experiences without either unity, or meaning, or significant relationship to persons.

III

The significant addition (if one may speak of it thus) which has recently been made to the series of Reality-Forms is that of an order of *subsistences,* or *essences* (Santayana), or *eternal objects* (Whitehead) which have taken their place among ideas and thus have finally dispossessed Rigid Realism and restored the realm of Reality to the reign of *minds*—no longer, however, to be regarded as mere logical mechanisms, or intellectual *automata,* but as cognitive-emotive-conative selves, or persons, with an *intentionality* which gives to Reality as a whole a comprehensively personal aspect.

The radical empiricist, like the mediaeval nominalist, is loathe to surrender the province of *sensa* to the determinative activities of rational consciousness. Are not all essences, he asks, simply forms of the behavior of objective phenomena discovered by *observation,* or, if not that, forms of behavior of the observer himself, who is simply a part of the all-inclusive Nature which he imagines himself viewing as an outsider? On the contrary observation (including induction) is now disclosed as a process by which are discerned, not so much forms of behavior, either external or internal, as interior forms of a rational consciousness which transcends both its objects and its own transitory states. Observation and induction are thus seen not so much as means of discovering external facts as a summons to the mind to apply its resources to hitherto inadequately organized experience.

Certain concepts and relations, more pragmatic than others, arise in the mind more directly by observational, *i.e., outwardly intended,*

[8] Living organisms, including the higher animals and man as belonging in the life-series, would, in one aspect, come under percepts, but in another, as nascent persons, would require a separate rubric.

[9] Both the "Personalism" of Bowne and the "Personal Idealism" of Howison are open to this criticism. Neither assigns sufficient reality to the Universal Value-Forms, although Howison, in certain of his writings, included in the recent volume *George Holmes Howison, Philosopher and Teacher* (University of California Press, 1934), showed his profound understanding of, and indebtedness to, Plato.

activity, others by more purely reflective, *i.e., inwardly intended,* activity. When Goethe told Schiller of his discovery of the morphology of plants the latter's remark "That is not an observation but an idea" showed how far, through his understanding of Kant, he had anticipated the recent advances of Conceptualism. Such an organizing idea, applicable to given phenomena, as that which Goethe had thus discovered, is of a higher order than that of a simple concept, like *plant* or *flower* or *tree.* It required examination and reflection to educe it from the realm of possible ideas; yet it emerged as essentially a mental rather than a physical law—although dependent upon phenomena.[10]

IV

The task of delimiting and organizing concepts has not yet been adequately accomplished. Certain *common concepts* (*e.g., horse, dog, bird, tree, flower,* etc.) clearly arise from noting (or, rather, denoting) resemblances which have only a very general and obvious unifying and classifying utility. These are succeeded by *scientific concepts* which are directed, or intended, toward less obvious but more definitive common structural or behavioristic qualities. Other concepts (such as *table, bed, chair*) involving the recognition of purposeful action directed toward utility-value may be termed *utility-concepts.* Those associated with size, color, temperature, taste, etc. (the so-called secondary qualities now termed essences) may be called *sensation-concepts,* since they arise in consciousness through a process of sensation denotation.

When one considers the extraordinary range and variety of concepts it is not strange that Plato, in the familiar passage in *Parmenides,* represents Socrates as quite puzzled at Parmenides' question what to do with those at the bottom of the scale, "such things as hair, mud, dirt, or anything else which is vile and paltry". To this Socrates replies, "I sometimes get disturbed and begin to think that there is nothing without an idea: but then again, when I have taken up this position, I run away, because I am afraid I may fall into a bottomless pit of nonsense and perish; and so I return to the ideas of which I was just now speaking [absolute ideas] and occupy myself with them." The New Conceptualism has gone down into this bottomless pit and rescued from obloquy and neglect even the meanest empirical ideas or sensation-essences. For they, too, are children of the mind, as it comes into creative contact with its environment. Yet the pit of non-

[10] This does not mean a recurrence to the Scottish Intuitionism, which posited a set of static ideas in the mind to be called into activity as occasion demands. Concepts and essences are, rather, to be regarded as intentional paradigms, common and communicable to minds as such, which draw into and embody within themselves an individualized experiential content and thus come to have a kind of reality of their own.

sense still yawns for him who puts sensation-essences on the same level with Value-forms or absolute ideas.

V

The integrating and evaluating character of the hierarchy of forms and concepts may perhaps be more concretely realized in some such way as follows: Let one first think *triangle* and then draw a triangle. Then let him ask: 'Which of these triangles is more real, that in my mind, or that on paper'? The answer will of course be, *the triangle in the mind,* without which none could have been drawn.

Now let him think of a concept representing, not a pure universal, but a product of purposeful utility-action—*e.g., table* or *desk*—and ask: 'Is the concept *table* more or less real than this actual table?' Here the answer is not so clear. The mind is not altogether ready to follow Plato when in the *Republic* (Book X) he pronounces the *concept bed* the real bed (the one "that God made") and the particular bed (the one man has made) less real. To a weary man *bed in particular* may seem more real than *bed in general.* Manifestly, however, the particular table or bed would not exist except as it originated from an idea and fulfilled a purpose. (The animal makes *its* 'bed', but never constructs *a bed.*) The idea, then, is at least as real as the object produced. *Yet the mind that has the idea and carries it into effect is more real than either the idea or its product.*

Next, let one think of a universal representing animate intelligence, *e.g., horse* or *dog,* and then of some individual horse or dog, Dobbin or Fido, and ask which of these two is the more real. Immediately the *individual* rises in the scale and the concept lowers (relatively), although, at the same time, in this case the concept designates a much higher class than in the previous instance. *Horse* and *dog* represent higher forms of existence than *table* and *bed,* yet Dobbin and Fido occupy a higher place relative to their respective universals. In other words, *a higher value and reality attaches to a living individual organism than to the concept under which it is subsumed.*

Take one step more and ask yourself whether the universal concept *man,* or the individual man, John Smith, is the more real. The individual rises to a much higher rank still, in the scale of being. John Smith takes precedence in value-reality over *man* (not *ideal man* but conceptualized man). Thus it becomes increasingly evident that *approximation to complete personality is the determining factor in the scale of reality.* Neither Ancient nor Mediaeval Philosophy gave this truth adequate recognition. It has required Personal Idealism and the Value-Philosophy to bring out, as it may now be recognized, the inherently superior reality of the person. We can no longer say with Aristotle, *Amicus Plato, sed magis amica veritas,* but rather *Amica*

veritas, sed magis amicus Plato; since without Plato (or the person) there were no *veritas.*

VI

Thus the obtrusive realm of sense-objects, or comparatively permanent 'occasions', regarded by common sense as the most real, proves to be the least real of all orders of reality. 'Objective reality', conceptualized as 'matter', resolves itself, strictly speaking, into the merely negative 'given' which is left when all ideas or essences are conceived as withdrawn from it. The essences cannot be such, that is, except to consciousness. It is consciousness, therefore, that gives character and meaning to sensation by implementing it with essences. To include *mind* among the phenomena, which are what they are only by means of the ideas by which the mind organizes them, is to subordinate the self to its instruments. It is true that when I conceptualize myself as *a person* I quite properly treat myself as an idea. But this idea is only my objective self, not my most real, *i.e.,* my subjective-objective, creative, social, self.

Personality alone is originative; nature (including man's physical nature) is what it is only derivatively.[11] This is not saying that this "too, too solid flesh" is not a real part of man, or—should we not say? —the most intimate part of his *environment.* If you prick him does he not bleed? Yes; but does he not feel the personal indignity you have shown him even more than the bodily pain? His relation to *you,* that is, is more real than even that to his own body.

Naturalism is thus ultimate unreason and self-treason. Whatever place an intellectual and aesthetic Naturalism, like that of Santayana, makes for essences and even for 'Spirit', is merely a sop to Cerberus—the conscious fabrication of a *cosmos* out of that which the mind knows (or thinks it knows) to be a *chaos.* Naturalism not only posits an alien entity as superior to the mind itself, but one that is chargeable with the unconscious and irrational cruelty of the ultimate destruction of its fairest and finest (supposed) product, along with all life.

VII

Yet, however strongly one may revolt from Naturalistic Realism, it cannot be met by going to the opposite extreme of Pure Idealism. Material objects, occasions, point-events, however large the part the mind has in forming them, have their own kind of reality. As items of the given, they cannot be reduced to *merely* the ideas or essences imposed upon them, or discovered within them, by intentional consciousness. *It is falsifying experience to reduce sensa to nothing but 'pure'*

[11] The finite mind is, of course, only relatively creative. Pure creativity requires a Creative Mind of infinite capacity with whom man coöperates.

ideas. Berkeley's radical idealism is too one-sided to be more than a pertinent challenge to recognize the neglected idea-factor in reality. Although *phenomena* as such are only *relatively* real—(so to speak)—as compared with selves and also with the concepts and *essences* without which 'sense-objects' would not be even distinguishable, to say nothing of being significant—still they have their own form of reality and are by no means to be denied a place in the realm of Reality. Nor can sensation itself be consigned to the philosophical ash-heap. However intrinsically secondary, or rather tertiary, in the value-reality series it may be, sense-experience has a very obstinate character of its own. Sensations have, indeed, a kind of reality that cannot be ignored, as the pin-prick instanced attests. While *eidetic*, or *essential*, reality belongs, as Husserl has demonstrated, to ideas, a lower reality belongs to sensations.

Moreover sensations or 'the senses' serve as the reality-indicators that open up the realm where *facts* have set up their impressive and rigorous rule, which must be respected or ontology floats futilely and hopelessly in the air. *Facts may be described as the meeting-points, or fusions, of concepts (including essences) and events in the experience of selves.* No fact without experiential content of some sort; yet no fact without structural idea also.[12] Every fact is the union of an idea, or subsistent, with an existent; it is a juncture of the given and the creative in the experience of a self. As such every fact has a certain unique and compelling reality, although without minds it would not *be*, *i.e.*, it would have no reality as fact. Thus Matter—if one chooses to retain this orthodox term for that elemental Energy, or Space-Time, or Whatever, into which Physics has translated it—proves to be, after all, virtually the "receptacle of forms", the definition of Matter which philosophy long ago derived from Aristotle.

VIII

From the creative union, on the part of selves, of sense-perceptions with value-essences arises the whole colorful order of Aesthetics—including *symbolism, sacrament, aesthetic meaning*—which Kant segregated and evaluated in his *Critique of Judgment*—a realm of Reality whose universal criterion is Taste.[13] Wondrously, intimately, luminously, is pure sensation thus integrated into and made to mediate the structure of Beauty. Subtly, intricately, inseparably, all our experiences, even our sensations, filter through transfusing ideas—hidden from us until an analysis of consciousness reveals them—into the realm of meaning and value

The realm of sense-experience and of facts is therefore by no means

[12] Properly speaking the essence or idea is *experienced* also.

[13] There is, *i.e.*, an aesthetic as well as a moral *apriori*, although as Hartmann points out, not every mind has risen to its level.

one for the personalist to despise, for it is the realm in which personality gains not only its practical bearings and discipline but also the realization and expression of values as they incarnate themselves in sensuous forms.

As one integrates ideas, of whose nature theoretically he has perhaps no understanding whatever—but the power of forming which is embedded in the very structure of his mind and the tissue of his experience—into the objectivities and relationships, the practical attitudes and acts, through which personal meanings and values gain exercise and expression, he thereby uses appreciatively and creatively the true medium of self-realization and social intercourse. For it is thus that persons come to themselves, develope their inherent powers, and progress toward the realization of the Realm of Ends. Manifestly there could be no meaningful reality in sensations except to minds, and apart from self-consciousness, emotion, and will, minds could not be truly minds, *i.e.*, persons. Granted that sense-experience, such as the tastes of different foods, have a certain value-content and meaning to the animal, similar to that which they have to the human, there is every reason to suppose them to be on so much lower a level as to have but a modicum of genuine reality. Even roast pig could hardly be the kind of reality to a dog, or even to John Doe, that it was to Charles Lamb. To Gautama Buddha his three grains of rice must have possessed a quality-reality that to the voracious schoolboy would be almost *nil*—albeit the Buddha found these same rice-grains in turn far less real than the objects of meditation for whose contemplation they served to sustain his life. Indeed the degree of reality in all things and thoughts may be said to be qualitatively determined by the degree of personality in those who experience them.

IX

In the light of Personalism the real deficiency of any philosophy that stops short of the full evaluation of selfhood reveals itself. Every such philosophy betrays its acephalous inadequacy and incompleteness. Just as Idealism has exhibited a strange and persistent losing of the *minder* in the *mind*, of the *knower* in the *process of knowing*, so Realism has lost the *knower* in the *thing known*, the *realizer* in the *real*. Yet all the time *he* is the supreme reality, the *fons idearum*[14] and, one might add, the *fons rerum*.

It is time for philosophy to fill the painful and rebuking hiatus at the summit of Ontology by placing there the person—not merely as mind, but as emotion and will also, or rather as the being who has mind, emotion and will, *i.e.*, the person.[15] There can be no Idealism

[14] Leibniz' phrase.

[15] That imperfect human personality is wholly inadequate and inexplicable apart from Complete Personality is, I think, equally clear.

without the idealist, no Realism without the realist, no Conceptualism without the conceptualist, no Pragmatism without the pragmatist. Philosophy requires that recognition of the supremacy of the person which alone can provide a theory of reality adequate, not only theoretically but practically, for human progress, both individual and social.

When Personality is given its essential priority and centrality then, and only then, the realm of Reality falls into an ordered and evaluated whole.

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SOME NEGLECTED ALTERNATIVES TO PRATT'S MIND-BODY THEORY

ONE who heartily agrees with Professor Pratt as to the supreme and perennial importance of the mind-body problem begs leave to call attention to what seem to him to be three serious confusions in the latter's presentation of that problem in his recent presidential address.[1]

1. I gladly accept the proposition that this is a real problem, and that any valid solution of it must take into consideration the empirical distinction which subsists between mental and physical phenomena—thoughts and nerve-processes, things and our awareness of things. This necessary presupposition undoubtedly involves at least a *duality* between these two sets of phenomena, and if this is all that Professor Pratt means by "some sort of dualism" (145) no exception can fairly be taken to what he says. As he has elsewhere put it,[2] what he is pleading for is a dualism of *process* as opposed to the earlier dualism of *substance*. It seems highly questionable, however, whether such a stretching of the term 'dualism' is wise, purely as a matter of clearness of language; and the present writer would far prefer to speak of 'dualitarianism' rather than of dualism in connection with any doctrine that admits an *ultimate* identity between the dual elements or aspects. There is, then, another allowable alternative to those three which alone Dr. Pratt acknowledges—Interactionism, Materialism, and (dualistic) Parallelism—namely, the Double-Aspect theory. This theory admits the empirical duality of mental and physical, and yet denies their *ultimate* dualism: it is, in other words, a Dual Monism. The present writer has attempted to defend such a dual monism in an earlier article in this *Review*,[3] and this is not the place to defend it further; but whether it is the true theory of the mind-body relation or not, it

[1] This *Review* XLV 144-166. Page-references in parentheses in the text are to this article.

[2] *Matter and Spirit* (Macmillan, 1922) 183 *et seq.*

[3] XLII (1933) 491-495.

at least meets the fundamental requirement set forth in the first sentence of this paragraph, and yet is neither (strictly speaking) dualistic nor exclusively monistic.

2. Again, if the causal relation is merely one of invariable sequence between any two phenomena of any kind whatever, there is, as Dr. Pratt says, no "causal objection to interaction" (145). Certainly the psychical and the physical do in some way "affect each other", and if anyone wishes to call this causal influence no one else can say him nay. To the present writer, however, such a usage is highly confusing. His own objection is based on the thought that the mutual relation of mind and body is so fundamentally different from that which subsists between physical phenomena that it is only confusing in the highest degree to apply the same term, causation, to both of them. Is it *meaningful* to speak of that which has no spatial characteristics as 'causing' a spatial phenomenon, or the converse? To the present writer the relation between mind and body is as different from that between a physical cause and its physical effect as is the relation between a personality and its inner experiences different from that between a thing and its qualities: each of these is a unique relation—not merely an example of the cause-effect relation in the one case, or of the substance-attribute relation in the other.

3. But the greatest weakness in Professor Pratt's account of the problem which so interests us both lies in his attack on Panpsychism (149 f.).[4] This theory he describes as teaching that consciousness is the inner reality of which the cerebral cortex is the appearance. If this is true, he quite pertinently infers, when after death consciousness ceases to manifest itself, the cerebral cortex, which is by hypothesis the appearance of consciousness, should also cease to exist; which is evidently not the case. What a strange misconception of the panpsychist's doctrine! It is not the *cortex* as an organ of the body which the panpsychist regards as the phenomenal correlate of consciousness, but the *activity* of the cortex. Consciousness is not an entity, a thing: it is an activity, a process. And when consciousness ceases, so far as direct evidence is concerned, at death, cortical *activities* do also cease: the grey matter does not, of course, cease to exist, but it does cease to *function*—which is just what the panpsychist, like everyone else, expects. To recognize this error in this particular criticism of panpsychism does not involve an admission of the truth of the doctrine criticized—a doctrine which seems to me to be inadequate to the situation, though containing a considerable element of truth—but out of fairness to the advocates of that doctrine the misconception certainly calls for correction.

[4] The same criticism is found in the work already cited, *Matter and Spirit* 64-67.

I am not attempting in these comments to deny the value and fundamental soundness of Professor Pratt's summary of the mind-body problem as it appears today, but merely calling attention to certain possibilities which he seems inclined to overlook. His conclusion that the situation is not merely a matter of psychical and physical states, but involves "the acceptance of a real and active self" (165), seems to me to be one of the most important of all truths; and the most serious indictment that one could offer against panpsychism is its neglect of this truth. This "real and active self" is a Subject (an 'I'), which is over and above all objects, including those in the mind itself (the 'Me'), and manifests itself coördinately, as I see it, in the phenomena of mind and brain.

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THE MIND-BODY PROBLEM

IN his presidential address on "The Present Status of the Mind-Body Problem" (this *Review* XLV (1936) 144-145), Professor Pratt says that "in the course of time three well defined dualistic proposals were worked out which between them exhaust the possibilities of solution, namely, Interaction, Materialism, and Parallelism". What about the traditional scholastic solution which takes its cue from Aristotle and goes by the horrible name of hylomorphism? Is it not the one solution that has retained hold on the minds of many philosophers for more generations than any other? And the adherents of it, at all events, protest strongly that their solution is not to be confused with Interaction. They would contend that much philosophical debate on the mind-body problem has occurred with so little tangible result in our times precisely because so many philosophers fail to visualize more than the three solutions mentioned in the quotation.

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THE MANY-VALUED LOGICS

IN the course of recent controversies over 'alternative logics' it has become fairly clear that the 'rivalry' between the many-valued systems and the two-valued logic is not unlike the relation between non-Euclidean and Euclidean geometries. It is generally recognized that as self-consistent postulational systems the non-Euclidean varieties are just as good as the more familiar Euclidean version, but that only one of them, to the exclusion of others, can be interpreted as an adequate description of the space of actuality. Thus, if it is perceptual space that is to be described, there is good reason to believe that it has the structure of Euclidean geometry; on the other hand,

physical space appears to be Riemannian in nature. The ultimate grounds for these beliefs are, of course, empirical observations; at any rate, they are not considerations which are derivable from the comparison of abstract geometrical systems as such. In the same way, the 'three-valued logic' (in what follows I use the three-valued system as representative of the many-valued systems) and the two-valued logic cannot be given preference over one another on purely abstract grounds, but only one of them can be accepted as actual logic. No doubt there may be disagreement as to the nature of actual logic, but so there are, as the example above of perceptual in contrast with physical space indicates, differences with regard to the nature of the space of actuality. For the sake of argument, however, I shall assume that actual logic is the logic of propositions, and, on this assumption, hold that the question whether actual logic is two-valued or three-valued depends entirely on the facts determining the significance of propositions.

In a recent article Mr. C. A. Baylis, taking an attitude which appears to be in essence the same as mine, has examined the considerations of fact which are given by Lukasiewicz in favor of three propositional truth-values.[1] The fact that it is *possible* (but not necessary) that *I shall be in Warsaw next year* is, according to Lukasiewicz, a proof that the italicized proposition has a truth-value which is neither truth nor falsehood. For if it were true now, he argues, I could not help being in Warsaw next year and my presence there then would be necessary; and if it were false now, my presence there then would be impossible. Mr. Baylis refutes this argument by pointing out that Lukasiewicz illegitimately identifies factual truth with necessity and factual falsehood with impossibility. The strength of Mr. Baylis' refutation lies in his interpretation of possibility which, I take it, is conceivability. For, of course, it is conceivable that I might not be in Warsaw next year even if in fact I shall be there. Conceivability is absolute possibility, a notion to which a great many philosophers would subscribe. But there are some who believe that every possibility is relative to certain conditions of fact, and Lukasiewicz is one of those relativists. And if relative possibility were the correct notion, then Mr. Baylis' refutation would lose its sting, since *relatively* to the truth (if it were true) that I shall be in Warsaw next year it would not be possible for me not to be there then. Mr. Baylis might argue that the 'relative impossibility' of not being in Warsaw next year is not in the least incompatible with the absolute possibility of not being there then. But I am afraid that he cannot argue from absolute possibility without prejudice to the issue, because it would seem that

[1] "Are Some Propositions Neither True Nor False", by C. A. Baylis, *Philosophy of Science*, April 1936.

absolute possibility is a notion which fits in with the two-valued logic but which would be out of place in the three-valued system. To make the point clearer compare the interpretations of the two tables below; the table A of the system of two values, and the table B of the system of three values.

(A)

p	$\sim p$	$\Diamond p$
1	0	1
0	1	1

$p = (p = 1)$

(B)

p	N_p	M_p
1	0	1
0	1	0
½	½	1

$p \neq (p = 1)$

It is very important to keep in mind that the symbols 1 and 0 have different interpretations in A and B: while 1 is 'true' and 0 is 'false' in A, 1 is 'certainly true' and 0 is 'certainly false' in B. Because of this difference $\sim p$ does not have the same significance as N_p, although both symbols may be read 'not p'. N_p unlike $\sim p$ does not denote the contradictory of p; this is particularly obvious when the truth-value of p is ½, which is interpreted as 'doubtful'. For the same reason $\Diamond p$ and M_p are also different in significance, although each symbol within its own system is interpreted as 'possibility'. In the system A, whether the given proposition p is true or false, it is *true* that it is possible or conceivable. This is so because the truth of p can be distinguished from its necessity and the falsehood of p from its impossibility. If the falsehood of p could not be distinguished from its impossibility, then of course it would be incompatible with the conceivability of p. Now if p should be not merely false but certainly false, its 'certain falsehood' could not be clearly distinguished from impossibility, the way mere falsehood is. Hence 'certain falsehood', like impossibility, would exclude the conceivability of p. This is exactly the situation with the three-valued system. It rejects the certainty of the possibility of p, when p is certainly false, because the 'certain falsehood' of p is incapable of being distinguished from its impossibility. To insist that the certainty of p's falsehood does not exclude the mere truth of its possibility would mean forcing into the three-valued system an interpretation of the symbol 1 which has no significance there.

The foregoing comments, if correct, are important as evidence that the problem of modality is closely connected with the problem of 'alternative logics'. In any event they show that arguments from modality cannot be used in determining the number of the truth-values of a proposition. Thus neither did Lukasiewicz prove the existence of three truth-values, nor did Mr. Baylis disprove it. I am convinced that the question of the structure of actual logic must be decided by examination of the facts of propositional significance independently of its modal qualifications.

In my *Theory of Logic* I have emphasized the "claim to truth" or the "assertive element" as constitutive of the significance of the proposition.[2] One of the consequences of the propositional claim to truth is the fact that the statement of a proposition is logically indistinguishable from the statement that this proposition is true. Symbolically this fact is expressed by identifying the symbols 'p' and '$p = 1$'. But it is important to observe that although these symbols are identified in the two-valued logic, they are kept distinct in the three-valued system. As C. I. Lewis puts it: "The proposition p and the proposition $p = 1$ are seen to be distinct: when p has the value $\frac{1}{2}$, NMN_p which is equivalent to $p = 1$, has the value O. But the *assertion* of p is equivalent to $p = 1$, in this as in the two-valued system because whatever is asserted must have the value 1 for all values of the elements—which means, by the matrix method, that it is a tautology whose falsity is inconceivable."[3]

When the symbols involved are interpreted, the reason for the difference between the two systems becomes quite clear. In the two-valued logic some propositions are false precisely because all of them claim truth but not all of them are justified in this claim. In the three-valued system, on the other hand, propositions must be deprived of the intrinsic assertive element, because if the assertion were always constitutively present, it would give the value 1, whenever correct, or the value 0, whenever unjustified, and therefore the propositions with the value $\frac{1}{2}$ could not be accounted for. Thus different views on the significance of a proposition are forced on the rivaling systems because of their basic difference in structure, *i.e.*, in the number of truth-values. And if I am right in believing that the assertive element is not an epistemic importation but enters in the make-up of a proposition as such, it follows that only the two-valued system is the actual logic because it alone is susceptible of interpretation in terms of actual propositions. If my belief were wrong, however, it would be still true that the choice between alternative systems depends on whether the assertive element is constitutive of a proposition or is an epistemic importation. For if the "claim to truth" be epistemic, it is the three-valued system which would be the exclusive form of the actual logic of propositions, as the above quotation from Lewis clearly shows. This is a warning to those logicians who accept the two-valued logic and yet reject the assertive element as constitutive of a proposition, without realizing that the two views do not go together.

If actual logic is not a calculus of propositions, but a system of linguistic transformations of sentences, then and only then the use of one or the other of the "alternative logics" would be a matter of

[2] *The Theory of Logic*, Harper & Brothers, 1936.
[3] C. I. Lewis and C. H. Langford, *Symbolic Logic* 226.

linguistic convention. It is not surprising therefore that the logical positivists, having discarded propositions and replaced them by sentences, accept 'many-valued logics' as genuine alternatives which are exactly on a par with the two-valued logic. But these logicians face a serious drawback as long as they hold that verifiability conditions both the meaning and the truth of a sentence. For the principle of verifiability gives enough perplexity to those who are trying to make it specific, even on the premise that a sentence has only two truth-values. It would be increasingly difficult to give a satisfactory account of verification with the introduction of new truth-values.[4] In fact a request for the verification of a sentence of which the truth-value is 'doubtful' does not seem to make much sense.

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[4] This is a variation of a comment made by my pupil, Mr. I. Copilowish, who observed that the logical positivists have no right to reject the propositions of metaphysics as unverifiable, because incapacity to be verified may merely mean that these propositions have a truth-value different from either 'truth' or 'falsehood'.

REVIEWS OF BOOKS

Platon. Par LÉON ROBIN. Paris, Félix Alcan, 1935. Pp. viii, 364.

It is now more than a quarter of a century since the appearance of Professor Robin's *La théorie platonicienne des idées et des nombres d'après Aristote.* This solid and exhaustive study presented a new interpretation of the theory of Ideas, arrived at by the original method of ignoring the dialogues and considering only the statements made about Plato's doctrine by Aristotle and the earlier Peripatetics. Since that time Professor Robin has issued a half-dozen other studies of separate dialogues and special aspects of the Platonic doctrine, supporting the interpretation put forward in the early work. Now comes the present volume, synthesizing and summarizing the results of the previous studies and affording an opportunity for those who have not yet heard of Professor Robin (and they must be many, to judge by the absence of his name from bibliographies where one would expect to find it) to become acquainted with one of the most original and comprehensive interpretations of Plato in modern times.

This interpretation is decidedly more suggestive of Neo-Platonism than of the conventional Platonism of modern expositors. The Ideas proper occupy a restricted and subordinate place in a hierarchy of intelligible forms and principles. Highest in this hierarchy is the principle of the *One* (the Measure of the *Philebus,* the Good of the *Republic*) which in conjunction with the Dyad of the Great-and-Small generates the series of Ideal Numbers and Ideal Figures. These ideal numbers are types of organization constitutive of the Ideas and of the world of Ideas; while the Ideas themselves occupy the next level in the hierarchy, being more complex and specialized models of being, and as numerous as the species of things and types of qualities in the sense-world. Last come the mathematical numbers and figures, forming a mean between the Ideas and the sense-world, just as the Ideal Numbers mediate between the One and the Ideas.

Professor Robin's interpretation runs counter to certain persistent opinions, for example that Plato's later mathematical theory of Ideas is, if not trivial, at least of secondary importance in his system. For Robin the theory of Ideal Numbers and Ideal Figures is the natural continuation and development of the doctrine of Ideas, satisfying the logical demand for clarity in the structure of the ideal world, just as the Ideas were set up to explain the sense-world. Again, Robin denies that the Ideas are to be identified with the Ideal Numbers in Plato's later thought. The Ideal Numbers are beings of a higher order than the Ideas, and themselves derivative from even simpler and more intelligible principles. He opposes also the view that would reduce the Ideas to mere laws or concepts; for the Ideas are substances and

energies, not mere forms of thought. And since this is so, there is no need to accept a kind of dualism (as is now the fashion) between the intelligible principles or "essences" and causal agencies, such as the soul, or the Demiurge, or God. Souls are not Ideas, it is true, but intermediate between the ideal and the sensible world. Nevertheless the causal efficacy they display is that of the intelligible world incorporated in their structure. The Demiurge is a mythical personification of the causal agency of the Ideas; and God, in the highest sense of the word, is identical with the Good, or with the One, the supreme principle of the intelligible world.

The purpose of the present volume is to expound this systematic and dogmatic core of Platonism as it took shape gradually in Plato's mind. In five chapters Professor Robin deals successively with the Nature of Knowledge; the Method of Knowledge; Phenomena and Reality; The World, the Soul, and God; and Human Conduct—and in each chapter he traces the development of Plato's thought from the Socratic compositions to the latest dialogues and the unwritten tradition. It is inevitable that the later stages of Plato's thought should receive peculiar attention. "The profoundest thought of Plato is given in the *Parmenides, Sophist, Politicus,* and *Philebus*" (31). The testimony of Aristotle regarding the Ideal Numbers, the doctrines of Measure and of Mixture in the *Philebus* and *Politicus,* the participation of kinds in the *Parmenides* and *Sophist,* the emphasis upon Division as a process of bringing to light the logical articulations of being —all this is for Robin peculiarly significant as the completion of the earlier theory of knowledge and being. Likewise the physics and psychology of the *Timaeus* are more than Pythagorean mythology. They are Plato's effort to find the intelligible structure and relationships in the sense-world and to account for the presence of this structure. Plato's mathematical physics (which Professor Robin suggestively compares with Descartes') expresses the logical superiority of quantity over quality, and his psychology affirms the subordination of mechanism to teleology. Organization is imposed on mechanism by the causal agency of the One, acting through the subordinate principles and the souls in which these principles reside.

Thus the last word of Platonism is hierarchy and harmony. Everywhere we find mediating principles: the spirited part of the soul mediating between concupiscence and intelligence; souls themselves mediating between the sensible and the intelligible worlds; the Ideal Numbers and Figures mediating between the Ideas and the One. Each level of the hierarchy is an imitation or "copy" of the level above, and derives whatever being and intelligibility it has from those traits and structures of the higher levels which it embodies.

The author expounds his results without entering into controversy;

and those who wish to know the textual and other evidence in support of the views expressed will in general have to refer to the author's earlier works. Some of Professor Robin's positions are now more generally accepted than when his first book appeared. No one today, I suppose, would regard Plato's mathematical and physical theories with quite the indifference (certainly not with the contempt) which used to be shown toward them. Robin's polemic against the subjectivizing of the Ideas is one with which many contemporary students will sympathize. And it seems to the present reviewer that Robin is right as against his earlier critics in insisting that the Ideas are not to be identified with the Ideal Numbers. Aristotle's language in Books M and N of the *Metaphysics* is really not as precise as it is often taken to be, and the entire issue might be regarded as based upon a confusion between the stricter and the looser use of the word Idea. Certainly the hierarchical tendency of Plato's metaphysics is evident enough even in the dialogues and throws much light (as Robin's volume shows) upon his ethical and political views.

If any general fault is to be found in Professor Robin's volume, it is the excess of system it attributes to Plato. Granting Professor Robin's assumption (vii) that Plato was above all a philosopher, and as such endeavored to systematize his results, it must still be remembered that Plato had a constantly growing mind, and it may be questioned whether he ever reached such a detailed and highly integrated finality as Robin portrays. The testimony of his successors is likely to be misleading on this very point, for it is precisely the trait of the disciple to try to close gaps left open by the master. Again, Plato was not merely a philosopher; and Professor Robin would probably be the first to admit that he has done less than justice to the artistic and imaginative elements that constitute for many readers the chief charm of Plato's work, and to the historical and cultural setting without which as a background no picture of Plato the thinker is quite complete.

On philological questions this volume throws very little new light. An introductory chapter of fifty pages gives a critical account of Plato's life and works. Robin rejects the Burnet-Taylor interpretation of the Socrates of the dialogues. He accepts the familiar order of composition established by the stylistic method initiated by Campbell. He refrains from dogmatic assertions of authenticity, but makes cautious use of the *Epinomis* and the *Epistles*. Again, like most recent interpreters, he looks upon political interests as foremost in Plato's thought. The brief account (34ff., 43ff.) of the most important manuscripts and early editions of Plato's text will be found useful, since this information is not readily available elsewhere. It is to be regretted that the publishers did not use Greek type for Greek words, instead of transliterating them into French. This practice is discon-

certing, at least to an English reader, and seems difficult to explain, since the Index uses Greek type.

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Hume's Dialogues. Edited by NORMAN KEMP SMITH. New York, The Oxford Press, 1935. Pp. xii, 284.

Hume's nephew, Baron Hume, faithfully carried out his uncle's instructions regarding the incorporation of additions and revisions into the text of the *Dialogues,* and he omitted passages marked for omission. These passages consist, in the main, of texts which were crossed out and not marked by Hume "still to be printed", as well as of additions which were made either on the margins of the manuscript, or on separate sheets, and so marked as to indicate where they belong in the original manuscript. On the strength of internal evidence, such as that of changes in Hume's handwriting between 1751 and 1776, which the editor has collated with the handwriting of dated letters, Professor Kemp Smith has been able to distinguish the additions made in, or before 1761, from those made in 1776, the year of Hume's death.

This edition thus presents the full text of what Hume wrote about "the argument from design", along with chronological information which shows that the most negative additions are the latest ones. And, what is more than an indispensable text, Professor Kemp Smith has given us lucid discussions of (1) Hume's attitude towards his Calvinist environment; (2) his religious views in general; (3) why he did not call himself an atheist; (4) his argument against miracles, and his critique of the argument from design in the *Enquiry*; and (5) some general matters bearing on the question as to which one of the characters of the *Dialogues* puts forward Hume's own views. These chapters are followed by four appendices: (a) "Boswell's Interview with Hume, July 7, 1776", which is quoted from the *Isham Papers*; (b) "Bayle on Strato's Atheism"; (c) an account of the evidence on which Professor Kemp Smith bases his decisions as to the various dates of the composition of certain parts of the *Dialogues,* and of the revisions; and, finally, a critical analysis of the main lines of argument in the *Dialogues.*

The principal consequence of these discussions, and of the critical analysis with which Professor Kemp Smith's introduction concludes, is that any interpretation of the *Dialogues* which finds in them the triumph of a moderate theism, is confronted by a powerful argument to the contrary. On the basis of evidence that would seem to be more than adequate, Professor Kemp Smith concludes that Philo "from start to finish represents Hume". Cleanthes is Hume's "mouthpiece only in those passages in which he is explicitly agreeing with Philo,

or in those other passages in which, while refuting Demea, he is also being used to prepare the way for one or other of Philo's independent conclusions". And Philo's arguments to these conclusions destroy the argument from design. Hume made it appear that Cleanthes is victorious in order to avoid the condemnation of the zealots, but mainly so that the dialogues might derive dramatic life from the specious strength of the arguments advanced by Philo's chief opponent.

This is not to conclude that the whole of Hume's teaching in the *Dialogues* is presented through any one of the characters. What the different views of the several characters have in common is a part of Hume's own view. But where the characters differ, it is Philo to whom we should turn for the remainder of Hume's conclusion in the matter. In a paragraph written on the last page of the manuscript, and in 1776, Philo points out at some length that "the controversies concerning the degrees of any quality or circumstance" are "involved in perpetual ambiguity". We may argue until doomsday whether Hannibal was a great, or a very great, or a superlatively great man, without reaching any definite conclusion. "That the dispute concerning theism is of this nature, and consequently is merely verbal, or perhaps, if possible, still more incurably ambiguous, will appear upon the slightest enquiry." The analogies by which a theism, or in its turn, an atheism, may be supported, are in both cases the stronger as they are the closer to each other. "Where then, cry I to both these antagonists, is the subject of your dispute? The theist allows, that the original intelligence is very different from human reason: the atheist allows, that the original principle of order bears some remote analogy to it. Will you quarrel, Gentlemen, about the degrees, and enter into a controversy which admits not of any precise meaning, nor consequently of any determination?" The difference between the claims of the theist and those of the atheist being a matter of fluctuating and uncertain degree, it is idle to attempt to regard them as matters of knowledge. According to Sir Samuel Romilly, Hume informed the Baron d'Holbach that he did not believe in the existence of atheists; that he had never seen one; and the Baron assured him that he was dining with seventeen. Yet, in the last year of his life, Hume still could find no difference between the theist and the atheist which would prevent them from "insensibly changing sides" with one another.

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Nouveau traité de psychologie. Tome IV. *Les fonctions et les lois générales.* Par GEORGES DUMAS. Paris, Félix Alcan, 1934. Pp. vi, 528.

This volume of the *Traité* contains two books of which the first is devoted to the question of organization. The main topics are attention,

habit, and memory, association of ideas, schematization. The second book is concerned with mental activity in the sense in which activity is the antithesis of repose: it develops into a study of automatisms, mental work, fatigue and finally sleep.

As the titles show, the first book is concerned with classical topics which have had a long history in what was once the field of "mental philosophy". Specialists in psychology will recognize the value of this review of recent work; in this notice we are more concerned to add that for those who are not specialists this is a most instructive section of the work. It is interesting to note how much the reflective thinkers of earlier days achieved or failed to achieve, and to compare the earlier methods with the experimental aims of the recent workers. The subject of memory, for example, offers scope for the expansion of this comparison, but the limits of this notice are restrictive.

Attention should be drawn particularly to the chapter on "schematization" (Revault d'Allonnes). This is an elaborate essay covering one hundred pages on a very complex topic of first-rate importance for the treatment of philosophical problems. It might be described, briefly and therefore inadequately, as an essay on the expansion of Kant's doctrine of schematism toward a complete theory of Gestalt. The author works definitely from Kant, but seems unwilling to go too far or too fast with the Gestalt theorists.

The titles of the sections, perception, apperception, schematism of number and rhythm, concept, judgment, reasoning, schematization in the case of the dog and the chimpanzee, will serve to indicate how the topic evolves as a modern review of the development from Kant to Köhler. This major effort is followed by a shorter essay on "symbolization" (George Dumas) which should not be overlooked by anyone interested in the psychology of literary expression, or the symbolism of mystical experience.

The second book very naturally has a more definite trend toward the physiological basis of activity; it is hardly necessary to say that the treatment is very competent, and it is not too much to say that the contribution on sleep (Claparède), as a survey of the work done on this subject, could hardly be surpassed.

This volume of the *Traité* is so full of excellent and interesting matter that a notice so brief as this can only amount to an inadequate statement of its importance for all those who have an active interest in philosophical or psychological problems. The bibliographies are as comprehensive as usual; some minor improvements may be noted. On page 160 Robertson is presumably G. Croom Robertson: his article *Association* may be "In Encyclopaedica [*sic*] Britannica, Vol. II", but we need to know which edition of the Encyclopaedia is intended; in any case the article is in the volume of Croom Robertson's *Philosophical Remains* (1894). On page 205 'Lacuna' is unfortunate for

Laguna; on page 253 'Wernincke' is an obvious printer's error. To draw attention to these points is indirectly to show how few errors can be found in a work which makes exceptional demands on the powers of its editor.

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La pensée. Tome II. *Les responsabilités de la pensée et la possibilité de son achèvement.* Par MAURICE BLONDEL. Paris, Félix Alcan, 1934. Pp. 558.

M. Maurice Blondel, Correspondent de l'Institut, Professeur Honoraire à l'Université d'Aix-Marseille, occupies a particularly interesting position in French philosophy. What experience means to those English and American idealists and pragmatists who stem from Hegel, *la pensée* means to the French idealists who carry on the traditions of Descartes and Pascal. Blondel is, as a recent critic writes, "une des figures les plus attirantes parmi les philosophes de ce temps". He goes back to the Cartesian, and ultimately Augustinian and Platonic, position that thought is the basic fact of existence—"La pensée ne se renie pas"—and that the true nature of reality is to be found in its inner *dynamisme* uniting abstract concept and intuitive awareness in a concrete experience which is at once singular and, at least potentially, universal.

Blondel's *dynamisme de la pensée* has all the expansive propulsiveness of Bergson's *élan vital;* but whereas Bergson's *élan* is non-rational, primeval becoming which somehow takes on structure essentially alien to it, Blondel's *élan* is *la pensée même,* and its leap is not into blank infinity, but toward its own infinite term. *La philosophie de la pensée* thus culminates in *le Penser pur et parfait* and the theism which marks the idealistic tradition from Plato to A. E. Taylor.

La pensée is the second work of a trilogy that will expound the whole of Blondel's activistic idealism. The first, *L'action,* was written in 1893. The last, *L'être,* is not yet published. The three titles are indicative of Blondel's fundamental faith in the "rapport du penser avec l'être et l'agir". Though the faith has never wavered, and *la pensée* has ever been central, the emphasis has shifted somewhat. *L'action* was essentially an attempt to bridge the gap between thought and its object by "la souveraine efficacité de la puissance médiatrice de l'action." On the one hand, "c'est par le canal de l'action que la vérité révélée pénètre jusqu' à la pensée sans rien perdre de son intégrité surnaturelle"; on the other, "si la pensée croyante . . . a un sens et une valeur, c'est parce qu'elle aboutit à l'action et trouve dans le pratique littérale son commentaire et sa vive realité" (*L'Action,* 108).

This is, of course, not to define *sens et valeur* in terms of *action;* it is rather to indicate their interrelation. Blondel specifically repudiates

subjectivism and positivistic pragmatism as "cette plus profonde erreur de ce temps". The mind does not impose its form upon external reality, but finds in its commerce with the outer world *le rythme organique de la pensée cosmique*. "Car s'il n'y avait point de lien entre les formes les plus rudimentaires de la pensée, de l'être et de l'action, la notion de vérité, l'idée de l'existence, l'élan de l'inspiration spirituelle seraient radicalement inintelligibles, irréalisables, impossibles à concevoir et à poursuivre" (*La pensée*, II 12). This, he holds, is true even of mystical knowledge, which is "prolongement, non point excroissance ou anomalie".

In *La pensée*, Tome I, *La genèse de la pensée, et les paliers de son ascension spontanée* (reviewed in this journal, July 1935) Blondel traces the career of thought in the universe rising by successive *inventions* from *la pensée cosmique* to *cette pensée vivante* which we know in our own mental life. In Tome II he undertakes "d'élémenter la science de la pensée" by examining the irreducibly dual nature of our conscious life—"deux pensées en chacune de nos pensées"—and finding their mutual implications the source of "l'idée même d'une responsabilité intellectuelle, d'une relation intrinsèque entre la pensée et l'activité morale" (21). The two thoughts in every thought are "abstraction et intuition, géométrie et finesse, analyse et synthèse, poésie pur et sens banal; sous mille noms affrontés deux élans semblent emporter les esprits vers des rives contraires. . . . Tour à tour les deux pensées, constamment unies et opposées, se dépassent l'une l'autre, par un mouvement cycloidal" (49-50), their alternating dominance and submission being determined by the ultimate aim of the conscious life. "C'est donc par la considération d'un point de vue dynamique" (51) that thought is to be understood.

Abstract thought gives us only a schematic hold on reality. Concrete thought presents an organic unity, "une plus organique concentration d'universalité et de singularité" (54). Discursive and intuitive thought unite in actual life: "Faut-il un secret concours de la vie spirituelle avec l'effort constructif de l'entendement discursif" (55). This inner *rapport* calls for a new word: "c'est le terme d'intrication. Le sens en est très différent de celui qu'évoque implication: est impliqué ce qui s'enveloppe et se requiert logiquement ou effectivement; intriqué, ce qui est enchevêtré comme une trame où les fils même inséparables pour la solidité du tissu, restent distincts et virtuellement independants" (57). Thought is then, to anglicize M. Blondel's useful term, intricative as well as implicative; and it is this inner intrication of an active spiritual and intellectual *élan* that burgeons into civilization with its triple life of intellectual analysis, moral obligation, and aesthetic awareness.

It is in this part of the work, rather than in the meticulous analysis of the paradoxical nature of thought itself, that Blondel's reflections

are the most interesting. He pleads for "ni scientisme ni fausse mystique", but for "un équilibre intellectuel des élans". He reminds us that "la pensée est bien génératrice de l'unité sociale", and that "c'est bien la pensée qui, par son caractère universaliste et unitif, doit, par raison, par devoir, rapprocher, associer, organiser, perfectionner la société comme l'expression déjà très haute de son ambition la meilleure" (156). "Si la société est, non un agrégat d'atomes humains ou un consortium d'intérêts groupés les uns contre les autres, si elle est une 'amitié', elle est, par cela même une pensée,—une pensée qui, vivante d'esprits, a besoin de science et de conscience" (164). As for philosophy, "son triomphe sera peut-être d'instituer une doctrine motivée de l'insuffisance essentielle à toute pensée humaine, d'examiner les conditions d'un achèvement possible et d'orienter ainsi toutes les formes de culture vers la seule civilisation qui réponde à tous les devoirs et à toutes espérances de la pensée" (207).

Civilization is at once the product and the moulder of thought. It calls morally, intellectually, and aesthetically to levels always beyond possible achievement in finite life. But if the real meaning of life lies in its spiritual unity, and if *penser, agir,* and *être* are indissolubly linked, and if there is no break in the inner potentiality of *le penser* toward *le Penser pur et parfait,* then temporal process culminates in eternal Being, and in the end, *l'être* is perfect functioning, *l'agir,* and perfect thinking, *le Penser.* And, concludes Blondel, of this approach to the mystery of being through "le problème des problèmes": "s'il en résulte une extension de la philosophie vers des perspectives où la spéculation n'a guère pénétré, ce ne sera point pour compromettre son autonomie ni pour dégrader son caractère rationnel; c'est au contraire afin de satisfaire à l'urgent besoin d'une doctrine plus enracinée dans la vie universelle, plus attentive à toutes les expériences de l'humanité, plus généreusement docile à toutes les aspirations de la pensée elle-même" (411).

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Possibility. University of California Publications in Philosophy, Volume XVII. Edited by GEORGE P. ADAMS, J. LOEWENBERG, and STEPHEN C. PEPPER. The University of California Press, Berkeley, California, 1923. Pp. 22.

The lectures included in this important collection are all concerned with the nature of possibility and its metaphysical status. The metaphysical interest is the predominant one, the concern being to answer the question well put by Professor Adams in the first lecture: "What Makes Possibility Possible?" Professor Adams himself answers that a world that contains "objective and constitutive possibilities" "will be a world in which there are types, kinds, relational structures, forms,

and universals" (23). Professor Church finds the status of possibility to be that of "singular essences whose repetition in experience can be anticipated in judgment" (51). Professors Loewenberg, Strong, Mackaye, and Pepper are all concerned to locate possibility in a context which relates it as closely as may be to the actual. Professor Loewenberg finds it in "capacity for being latent in the actual" (84) which he designates as "the coactual". For Professor Mackaye the actual contexts in which things are discovered set the limits and provide the meaning for their possibilities (148). Dr. Strong links possibility with process and eventualities with events in a way reminiscent of Dewey, and Professor Pepper depicts with sympathetic insight the "textures", contexts, and environment to which such contextualism is committed. For him contextualism is itself only a possible theory. A summary statement of conclusions can, of course, give no indication of the skill, both literary and philosophic, with which these doctrines are presented. Most original among the metaphysical essays is Professor Savery's "Possibility and Pluralism". By distinguishing actual relations which are "real rods of connection" from "nominal" relations in discourse which are not actual at all, Professor Savery is not only able to defend a concatenated world against Bradley's criticisms but also to sketch a theory of truth in which correspondence reduces to identity of proposition and fact and identity to logical verifiability (since only in actual confrontation with fact is there a "real relation" between a proposition and its referent). This theory is important, if true.

On the analytic rather than the metaphysical side are Professor Lenzen's useful account of the very extensive role of possibility in scientific description (possible positions, possible aspects, etc.) and Professor Marhenke's discussion of the relation of possibility and significance. That there are levels of significance, that the distinction between the possible and the impossible arises within the realm of the significant at any assigned level, and that what is significant or possible is always relative to criteria specified or implied, is shown clearly and, to me at least, convincingly. It is not often that philosophical essays manage to establish a point definitely, but the argument here advanced, supported and supplemented by that of Professor Savery, that the impossible is not to be identified with the non-significant, seems to me not only well argued but proved.

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Wahrscheinlichkeitslehre. Von HANS REICHENBACH. Leidin, A. W. Sijthoff's Uitgeversmiji, 1935. Pp. x, 452.

The problem of probability has long troubled logicians as well as mathematicians. But very few real analyses have been made. The

outstanding attempts to derive a real theory of probability based on logic are those of Boole, Keynes, and von Mises. But these seem to be unsatisfactory. The reviewer of this new work has made a careful study of the problem and comes to the conclusion, as have many others, that the real solution of the problem awaits the development of a complete logic. Boole's and Keynes's attempts to establish the theory of probability on a two-valued logic were doomed to fail for that very reason. As the reviewer pointed out in an (unpublished) paper read to the Southern Society for Philosophy and Psychology, the development of a multi-valued logic based on a continuous function of truth-values alone would lead to a solution. (This paper will appear in a later issue of this journal.)

Reichenbach in this new work on the subject attacks the problem from the same point of view. Already in a series of articles in *Erkenntnis* for 1930-1933, Reichenbach has offered arguments in support of a logic having many truth-values and indicated that he was deriving the theory of probability from this "Wahrscheinlichkeitslogik". In the light of the philosophic analysis in the articles and the logical as well as mathematical development of this book, the work of Reichenbach gives indication of being an important landmark, since this matter concerns "unser letztes Wissen von der Natur überhaupt. . . . die Frage was unsere Aussagen über die Wirklichkeit eigentlich meinen" (13).

In general probability has heretofore been defined in two ways: (a) as the measure of our state of knowledge or ignorance (b) as a frequency of certain factors. The subjectivity and sterility of viewing probability in the first of these ways is obvious. In the frequency-theory two factors have been considered: (1) the occurrence of the event itself; (2) the verification of the proposition describing the event. But every occurrence of an event can be handled only in propositional or propositional-functional form. Hence if we are to deal with frequencies they must be interpreted or defined logically. And it must be kept in mind that any logic of probability must be of such nature that somehow or other the probability-integrals can be derived from them. This our author recognizes (12), but he himself treats probability as a relation akin to implication which is defined by the axioms of probability. In this respect his foundations are not deep enough, since probability can itself be defined in terms of propositional functions. The importance of propositional functions is recognized much later (374 ff.), when Reichenbach reduces his own definition (see below) to the form of such a function and acknowledges probability to be a property of propositional functions. However, even here the ρ in $O\,\exists\rho P$ is undefined.

Reichenbach considers both meanings of probability of Section 9, and concludes that frequency is the more significant one. He does not

tell us whether it is the frequency of events or of verified propositions he is considering, but varies from one to the other. It is true that propositions describe events, but that signifies that the proposition is important and logic plays a significant part in the development of propositions.

In the first section a brief review of the history of the Probability-concept shows three lines of development: (1) the every-day meaning; (2) the mathematical meaning; (3) the causality meaning. Every-day usage of probability is very vague and leads to no philosophic discussions. It usually assumes the existence of the concept as removable by the development of greater precision. The history of the development of probability by Pascal, Fermat, La Place, Bernoulli, and others, has been told frequently (*e.g.*, by Fisher, *Mathematical Theory of Probability*, and Todhunter, *Probability*). These writers contributed mainly a recognition of the close connection between probability and statistical frequency. The assumed relation between probability and causality has for the most part been that causality is supreme and probability only a means of working when causal connections have not been found. However, the modern developments of quantum mechanics, the kinetic theory of gases, and similar theories, indicate that only relations of probability exist in nature. Causal connections are only ideal limits. Hume recognized the secondary nature of causality; but Kant, by emphasizing its *apriori* nature, misled later thought.

An analysis of the concept of probability leads to a new logic, the logic of probability. But before this is developed, it is necessary to analyse the mathematical concept of Probability.

The second section gives a survey of the usual two-valued logistic, such, for example, as Carnap gives in *Abriss der Logistik*. It is of interest to note that Reichenbach finds the theory of types totally unnecessary for the development of his "Wahrscheinlichkeitsrechnung" (40). If, in the more general logic of probability, the theory of types is seen to be superfluous, this suggests to the reviewer that Russell's attempt to use it to solve his difficulties was misguided. The fact that there were such difficulties should have suggested to him that his logic was too restricted. The entire discussion centering around the theory of types, as well as the recent attempt of Quine to generalize it, is on the wrong track.

In the third section, Reichenbach begins his development of probability from two points of view: (1) pure operational analysis, (2) intensional analysis. At this point the present reviewer radically departs from the author's development. Reichenbach treats probability as an undefined relation akin to the 'if-then" relation, whose properties are to be developed. The reviewer believes he can show that probability can be defined in terms of propositional functions, using what Couturat

has called the "coefficient of truth" of such functions. Reichenbach develops his logic of probability from his analysis of probability, tending to avoid entirely the theory of modalities. The reviewer believes he can show the theory of modalities to be the logical generalization of the theory of probability, and can hence derive probability from modality.

For Reichenbach probability and possibility are two disparate concepts (84). Probability asserts more than mere possibility; it assumes a definite regularity between two events. Reichenbach at no point distinguishes clearly between logical and ontological possibility. An event may be *ontologically* impossible because the conditions necessary for its occurrence are not present, yet that event may be *logically* possible since it does not involve any contradiction. Probability is from our point of view a *logical* concept (as it is for Reichenbach also) and hence should refer to the *logically* possible. For purposes of clarity, it would be well if all use of the term *possible* were restricted to ontology and *probable* kept solely for logic.

From the operational point of view Reichenbach introduces the definition $W(O, P) = \text{Df}(O \exists_p P) = \text{Df}\ (i)(x_i \epsilon O \exists_p y_i \epsilon P)$ *i.e.*, W(O, P) is to stand for "if O is true, then P has a probability p", which means, "for all i, if x_i is in the Class O_i then the probability that y_i is in P is p". Probability then for Reichenbach (57) is a general implication between propositions affirming the membership of elements in classes. The sequence so defined is called a probability-sequence. But this, the reviewer feels, is not fundamental enough, since an element x_i is a member of a class C if and only if, when f(x) is the descriptive *function* of C, f (x_i) is satisfied.

Implication is then $(O \supset P) \supset (O \exists_p P) \cdot (p = 1)$; but the converse is not true.

Reichenbach now gives a set of axioms for the derivation of the calculus of probability, but gives no exhibition of independence and consistency. The logistic part of this is kept within the W( ) symbol.

Later (82) the symbol W(O, P) as a whole is equated to its intensional meaning.

$$W(O, P) = \lim_{n=\infty} H_n(O, P) = \frac{\sum_1^n (x_i \epsilon O)(y_i \epsilon P)}{\sum_1^n (x_i \epsilon O)}$$

where $\sum_1 (x_i \epsilon O)$ denotes the quantity of those x_i between 1 and n or which $(x_i \epsilon O)$ is satisfied. This definition allows Reichenbach to deduce all his axioms.

It is evident that probability as here defined deals with sequences of elements. Accordingly the fourth section of the book treats of the theory of order in sequences. The purpose of this section is to describe

all possible forms of probability-sequences (124) and to consider certain technical problems connected with such sequences, especially the problem of probabilities in subsequences related in a definite position to the main sequence.

In Section 6, another meaning of the axioms for probability is developed which has nothing to do with frequencies in the usual sense, but is concerned with aggregates (*Mengen*). $W(O, P)$ is defined as $\frac{M(O \cdot P)}{M(O)}$ where O and P are aggregates (say represented by areas), and $M(O \cdot P)$ means the ordinary mathematical measure of the conjunction of O and P. This is extremely interesting since the reviewer has made similar considerations serve as the foundation in his own work on this subject. Clearly if we consider O and P as aggregates, from another point of view they can be considered as representing frequencies. Further, if for $M(O \cdot P)$ we use the number of members of O satisfying the function describing P, we get a very satisfactory foundation for probability from which all we need is derived without first smuggling it in. The brief space of this review does not allow me to develop this thesis. The remainder of this section is taken up with technical developments into which we need not enter here.

Sections 7 and 8 continue the technical development. Section 7 treats of the relation between frequency and the probability concept, and after proving Bernoulli's theorem decides that the probability-concept cannot be replaced by the frequency-concept, although it is possible to correlate a frequency-sequence with any probability-sequence. Section 8 treats of probabilities of probabilities.

A consideration of the concept of limit of probability leads to the recognition that ordinary propositions are capable of being more or less true according to conditions (367 ff.). This leads to the recognition that ordinary logic is merely an "Alternativlogik" (360) and too narrow. Hence it is necessary to develop a logic of probability having a continuous scale of truth-values. True and false are here only extreme points of the scale (360). The problem involved is that of putting the concepts of probability and possibility into the form of a multiple-valued logic (365).

After reducing his original definition (i) $(z_i \epsilon O \exists_p x_i \epsilon P)$ to the form $W[f(z_i)\ \varphi\ (x_i)] = p$, the modalities for the case of finite sequences at least are defined (398) as necessity $= {}_{Df}(x_i)\ \varphi\ (x_i)$; Possibility $(Ex_i)\ \varphi\ (x_i) \cdot (Ex_i)\ \varphi\ (x_i)$. A table of truth-values for a three-valued logic in terms of these modalities is constructed (384). The tables for the logic of probability are then set up having the added column for $(\varphi x_i \exists \psi y_i)$. Reichenbach then shows how all other many-valued logics are special cases of that having a continuous scale of truth-values.

In this work Reichenbach definitely accepts the frequency-theory as

the fundamental interpretation of the probability-concept, although he extends it to mean also a correlation of individuals of two classes. He does not define very clearly how this correlation is to be set up. Furthermore the connection between implication and probability = 1 is only vaguely explained.

We must conclude with the remark that although this work with its recognition of a continuous many-valued logic as the basis of probability is a significant advance, it cannot be considered as a final solution of the problem.

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DESCRIPTIVE NOTICES

Lehrbuch der Geschichte der Philosophie. Von WILHELM WINDELBAND. Mit einem Schlusskapitel über die Philosophie im 20. Jahrhundert und einer Übersicht über den Stand der philosophiegeschichtlichen Forschung herausgegeben von HEINZ HEIMSOETH. Tübingen, J. C. B. Mohr (Paul Siebeck), 1935. Pp. xl, 644.

Forty-five years have elapsed since the first edition of this classic work, which has been known to readers of English in Professor Tufts' translation for almost that length of time. Its recognized virtues of vast scope (over twelve hundred philosophers are mentioned in it) and remarkable condensation remain undimmed by the passage of nearly half a century. The present inexpensive edition adds a bibliographical survey comprising forty closely-printed pages, and a chapter on 20th-century philosophy by Professor Heimsoeth of the University of Cologne. The latter continues Windelband's original emphasis on "the history of problems and conceptions" in three sections devoted to the problem of knowledge, the regions of reality, and man and history respectively. Little attention is paid to non-German thinkers, least of all to American philosophers. Only in the last two pages, however, does the blight which has fallen upon German philosophy at present become evident, where the editor feels obliged to sully Windelband's text by including in a serious history of philosophy the names of Comte de Gobineau, Houston Stewart Chamberlain, and Alfred Rosenberg.

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Recherches sur la Préparation Évangélique d'Eusèbe et l'édition perdue des œuvres de Plotin publiée par Eustochius. Par PAUL HENRY. Paris, Ernest Leroux, 1935. Pp. xii, 144.

Of the two ancient editions of Plotinus, made respectively by Eustochius and by Porphyry, only the latter has survived. The extracts from Plotinus' teaching made for Longinus by Amelius were not properly an edition at all and, in any case, seem to have disappeared early. Among Plotinus' earliest writings was the treatise, *On the immortality of the soul.* Of the four sections in which it has been transmitted one survives in only a few manuscripts of Plotinus and one is omitted in all. These two passages are, however, preserved in the *Praeparatio evangelica* of Eusebius. In a highly technical but profoundly interesting dissertation M. Henry, after demonstrating the untrustworthiness of all printed texts of Plotinus, shows conclusively, by comparing Eusebius' extracts from Plato, Philo, and the pseudo-Plutarch, with the excellent texts available of these authors, that Eusebius quoted his numerous pagan sources with scrupulous fidelity. Then in a long chapter, which contains much new information based on personal inspection of manuscripts, he discusses the chief extant *codices* of the *Praeparatio evangelica.* His most notable conclusion is that Eusebius did not use Porphyry's recension of Plotinus, but another, probably that by Eustochius, which was slightly earlier in date than Porphyry's but gave an inferior text. A detailed com-

parison in the second part of the monograph between the extant manuscripts of Plotinus and of Eusebius in those sections of the *De immortalitate animae* where the evidence of both traditions has survived makes the hypothesis of Eustochius' authorship of the Eusebius' citations virtually certain. The high quality of M. Henry's book will make all students of Plotinus eager to see the first part of his *Études plotiniennes*, now in the press, and hope that in time he may publish an improved text of all Plotinus.

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CORNELL UNIVERSITY

Locke and Scepticism. By ALBERT HOFSTADTER. New York, Albee Press, 1935. Pp. ii, 134.

Mr. Hofstadter attempts by a detailed and painstaking analysis of Locke's *Essay* to prove two theses. First, Locke's view of substance constantly leads him to a positivistic scepticism which is out of line with naïve experience and common sense. Second, in his discussions of nature, knowledge, and particularly the phenomena of communication in Book III, Locke really abandons the "substrational" theory for a "contextual" position far more adequate to the original data of experience. Few readers will dispute Mr. Hofstadter's first thesis. Locke's notion of substance certainly led him into great epistemological embarrassment, as he himself admits. Whether Locke's various inconsistencies actually point to a more satisfactory "contextual" point of view is far less clear. Mr. Hofstadter, indeed, gives only a few suggestions concerning the nature of such a theory. It will regard knowledge as "a natural occurrence" to be understood "in its relations to other natural occurrences". Idealism is taboo, since its point of departure is the same metaphysics of substance which led to the sceptical dilemmas of the *Essay*. This is as far as Mr. Hofstadter takes us. Does he not really mean that the traditional category of substance is inadequate for an accurate description of the phenomena of knowledge and communication, and that the only hope for further light must come from a more careful scrutiny of these phenomena without prior prejudice, whether idealistic or naturalistic in kind? The remedies for Locke's difficulties, that is, are to be found not in a less but in a more radical empiricism.

JOHN WILD

HARVARD UNIVERSITY

Law and the Lawyers. By EDWARD S. ROBINSON, New York, The Macmillan Company, 1935, pp. xiv, 348.

This book, as the author himself states, is part of the recent realistic movement in American jurisprudence, and should be read in conjunction with T. W. Arnold's *Symbols of Government*. The two are co-warriors at Yale on the embattled frontier between law and psychology. The adjective "pragmatic" perhaps better describes this diverse ferment in recent legal thought than the term "realistic." Robinson pleads for a scientific or "naturalistic" method of approach to legal phenomena—for a "fact-dominated" jurisprudence. An important element of its subject-matter are the thought-processes of the "lawmen" themselves, whose rationalizations, formalisms,

and fictions, can by no means be taken as a complete explanation of what they do or why they do it, but must be analysed and evaluated along with the many "non-logical" factors operative in the judicial process. Psychology is the best weapon in the armory of the enlightened jurist, although Robinson is duly aware of the confusion and conflict in contemporary psychology. The author seems little exercised over the thorny problem what is a fact; the question whether, particularly in the social sciences, moral judgments can or should be separated from factual ones; or the problem whether the scientific method which he assumes to be possible can furnish us with ethical criteria. In true pragmatic fashion he assumes that "moral judgments are conclusions regarding the facts", that "wherever there are widely accepted facts, the moral values will be brought into line with them" (40). Scientists can and should be purely objective observers and men seeking the good life at one and the same time, a desideratum concerning whose possibility Robinson leaves us somewhat in doubt.

MAX A. SHEPARD

CORNELL UNIVERSITY

What Religion Is and Does. By HORACE T. HOUF. New York, Harper & Brothers, 1935. Pp. viii, 374.

The author carefully abstains from any originality or profundity in this volume. This might be expected in a book evidently put together from the lecture, notes of a course in religion, the subject-matter of which was determined, according to a statement in the preface, largely by students' questions. The result is a book containing a great variety of topics ranging from a chapter on what God is like to one concerning the denominations of America, all treated in a clear, concise, and superficial manner. Religion itself seems to be regarded as a dispensable, but agreeable emotional uplift; it nourishes "a right and noble spirit" (314), and is "a rewarding experience . . . ideally and emotionally" (55). The book is probably the result of the recent fashion of giving general and "survey" courses, and is quite suitable for that purpose.

J. R. CRESSWELL

WEST VIRGINIA UNIVERSITY

Revolution Whither Bound? By HUGO FERDINAND SIMON. New York, Farrar and Rinehart, 1935. Pp. xiv, 380.

The substance of this book was given as lectures at Northwestern University, and the author is, or was, the German consul-general in Chicago. Professor Kenneth Colgrove, in an introduction, assures the reader that Dr. Simon has "the detachment of the scientist"; the present reviewer would prefer to say that the propaganda is kept within the limits of academic *savoir faire*. The general thesis defended is that fascism is democratic, though not liberal, and that dictatorship is due to a spontaneous welling-up of the emotions of the masses. The very rational motives of the gentlemen who stage-managed the mob-psychology and the cool ferocity with which it was helped out by terrorism are referred to only euphemistically. The universality of certain economic problems and of certain administrative tendencies is used to convey the impression that ministerial government in

England, presidential government in the United States, and Hitlerism in Germany all come to about the same thing.

GEORGE H. SABINE

CORNELL UNIVERSITY

The Political Philosophies of Plato and Hegel. By M. B. FOSTER. Oxford, The Clarendon Press, 1935. Pp. xiv, 208.

The purpose of this book, as stated in the Preface, is "to study the history of philosophy philosophically". It contains two chapters on the *Republic* and four on Hegel. With reference to Plato the author holds that a confusion between the division of labor and the division into classes prevented Plato from seeing the "organic" nature of the state. Accepting Hegel's view that modern political theories differ from ancient in making freedom the end of the state, the author points out five senses in which Hegel uses the expression, "subjective freedom". The distinguishing characteristics of modern political theory are derived from the Christian doctrine of divine creation which has given rise to the conception of sovereignty. But Hegel failed to absorb the truth of the Christian doctrine of divine creation.

GEORGE H. SABINE

CORNELL UNIVERSITY

The Historical Imagination. An Inaugural Lecture delivered before the University of Oxford on 28 October, 1935. By R. G. COLLINGWOOD. Oxford, The Clarendon Press, 1935. Pp. 22.

The lecture stresses construction and criticism, rather than reproduction, as the function of the historian. These are accomplished by the historical imagination making a continuous and coherent picture of the past, similar to that produced by a novelist, but true: *viz.*, localized in time and space, consistent, and in accord with evidence. Historical thinking is described as "an original and fundamental activity of the human mind", and the idea of the past as an innate, *a priori* idea.

GEORGE H. SABINE

CORNELL UNIVERSITY

La science et la métaphysique devant l'analyse logique du langage. Par RUDOLF CARNAP. Paris, Hermann & Cie, 1934. Pp. 46.

This is a translation of an essay which first appeared in the second volume of *Erkenntnis*. Its object is to prove that what is referred to as trans-empirical metaphysics has no cognitive worth whatsoever. The conditions for cognitive meaning are first analysed, and it is shown that both in the case of concepts and propositions we are required to know the *syntax* of the given expressions; in the case of a proposition or sentence we must know from what other sentences it is deducible or what other sentences are deducible from it, so that in the end the truth-conditions for the sentence must be specifiable. The author then examines various metaphysical statements and shows that since they violate these elementary conditions they cannot have a cognitive function and serve merely to express or evoke sentiments, desires, and images. The analysis of a passage from Heidegger is especially successful in showing this. While this essay is now considerably

outmoded as a definitive statement of the position of the *Wiener Kreis* on questions of meaning and verifiability, it can still serve as a good elementary introduction to it.

ERNEST NAGEL

COLUMBIA UNIVERSITY

Signification de l'histoire de la pensée scientifique. Par FEDERIGO ENRIQUES. Paris, Hermann & Cie, 1934. Pp. 68.

In the present monograph Professor Enriques makes explicit the general philosophic views which form the background for his studies in the history of science. Science for him is not a completed set of doctrines, but a type of human experience in which our conceptions of the world become refined and broadened with time. Consequently, he does not consider a purely logical analysis of science and its methods adequate, and the full meaning of scientific ideas must be learned from the occasions which generate them and the history which molds their logical form. Of particular interest are Professor Enriques' comments on the positivistic, idealistic, and pragmatic conceptions of science. His evaluation of the rôle of the historicism of the last century in developing an experimental rationalism is highly suggestive, and one would like to hope that he will soon give us a fuller treatment of this theme.

ERNEST NAGEL

COLUMBIA UNIVERSITY

Structure de la pensée et définitions expérimentales. Par PAUL RENAUD. Paris, Hermann & Cie, 1934. Pp. 24.

According to the author the structure of our ideas bears certain marked resemblances to chemical, optical, and mechanical behaviors, when these physical processes are formulated in terms of geometric trajectories. To explain these and other analogies, he introduces the notion of "cells of knowledge", each of which is a geometrical field of sense-data not distinguishable experimentally. Every experimental domain is then claimed to be a bounded domain of these "cells", and the author tries to show how physical magnitudes, and especially the notion of a definite chemical compound, can be defined in terms of them.

ERNEST NAGEL

COLUMBIA UNIVERSITY

Qu'est-ce que Dieu? Qu'est-ce l'être? Par MAY LORENZINI. Paris, Félix Alcan, 1934. Pp. 94.

This little book is written in the form of a dialogue. The two problems discussed are: the real and God. These two are really identical. The real exists in itself, "en soi, en dehors de toute perception": it is timeless and changeless. In so far as the real or the universe is conscious of itself as a whole it is universal consciousness, spirit, God; in so far as it perceives itself as object it is body, matter. God, therefore, is creator as well as creation, consciousness as well as body. Individual consciousness is a part of universal consciousness. Just as the creator and the creation or God and

the universe are one, the individual, too, is mind in so far as it is conscious of itself as subject, and body in so far as it perceives itself as object.

PETER EPP

OHIO STATE UNIVERSITY

God in the Philosophy of Schelling. By ROWLAND GRAY-SMITH. Philadelphia, 1933. Pp. 120.

Gray-Smith's doctor's thesis offers a running commentary on Schelling's developing thought of God. Each of the seven periods centers about events in his life, academic, social, and political. Schelling appears to have enjoyed acclaim. Beginning with God as the absolute ego the development seems to have been a series of elaborations upon that fundamental unity. The design which the author interprets as mature and significant is given the name "personal panmonothelism". An unorthodox Trinitarian doctrine is defended. Schelling's position offers to this reviewer a fine refutation of the practice of identifying naturalism with materialism altogether too common nowadays.

VERGILIUS FERM

THE COLLEGE OF WOOSTER

G. W. Leibniz: Lettres et fragments inédits sur les problèmes philosophiques, théologiques, politiques de la reconciliation des doctrines protestantes. Par PAUL SCHRECKER. Paris, Félix Alcan, 1934.

The letters and fragments published for the first time in this book are from a collection of manuscripts now in the possession of the National Library of Warsaw. In the eighteenth century they belonged to Count Zaluski. When he died in 1774 he willed his library of about 236,000 volumes to the Polish nation. In 1795, at the time of the third partition of Poland, the library was transferred to St. Petersburg and incorporated in the Imperial Library. There it remained until the end of the War; then it was again recovered by the National Library of Warsaw. Among the collections of this library are the manuscripts from which the letters and fragments published here are taken. The published collection contains letters written by and to Leibniz, some in Latin, some in French, some in German. They deal with theological problems widely discussed at that time, especially with the problem of a possible union of the two protestant confessions, the Lutheran and the Reformed. Leibniz was in favor of such a union.

PETER EPP

OHIO STATE UNIVERSITY

Makers of Christianity from Jesus to Charlemagne. By SHIRLEY JACKSON CASE. New York, Henry Holt and Company, 1934. Pp. xii, 256.

In a series of well-drawn and vivid sketches Professor Case brings before us leading representatives of Christianity from Jesus to Charlemagne and indicates the gradual development of its distinctive type of thought, worship, and social organization. It is an impressive picture-gallery. To appreciate fully the portrait of the founder it is important to be acquainted with the author's earlier work on Jesus, an exceptionally able attempt at

a plausible biography. Among the makers appear not only prophets and apostles, mystics and ascetics, inquiring philosophers, resourceful apologists, and learned exegetes, but also ambitious prelates and shrewd statesmen. Heretics are given respectful attention as well as saints, just as the sophists are now considered seriously by the side of the recognized philosophers before and after Socrates. Throughout the volume there are evidences of ample erudition, critical judgment, and sympathetic insight. Was Christianity made by these outstanding personalities? Unquestionably there were other potent influences that entered into the process. But a treatment, similar to this, of the centuries since Charlemagne by so competent a hand would be welcome. Christianity is still in the making.

NATHANIEL SCHMIDT

CORNELL UNIVERSITY

Elementares Lehrbuch der Sozialpsychologie. By WILLY HELLPACH. Berlin, Julius Springer, 1934. Pp. v, 166.

The author of the "Geophysical Phenomena" offers here a new type of social psychology which might be called autonomic. The subject is treated not as an expression of the organization of community-life, but as a science of psychic facts only. The first part deals with inter-psychic communications (*mitseelischen Wirkungswege*), which are divided into expressions (*Ausdrucksweg*), communications (*Mitteilungsweg*), and operations (*Handlungsweg*). The second part treats of inter-psychic propensities to action (*mitseelischen Wirkungsantriebe*), and the third of interpsychic forms (*mitseelischen Gebilde*). In the fourth the author treats the collective unities (*gemeinseelischen Einheiten*) and in the last he gives a social psychology of the self and a social characterology (*einseelische Gestaltung aus mitseelischer Beziehung*).

ERNST HARMS

BALTIMORE, MARYLAND

La causalité des théories mathématiques. Par GEORGES BOULIGAND. Paris, Hermann & Cie, 1934. Pp. 42.

The author was stimulated to write this essay by the ideas of Pierre Boutroux. It tries to exhibit the similarities between reasoning in the positive sciences, especially physics, and that employed in mathematics. The author first claims that mathematicians prefer proofs which have a clear "intuitive" basis to purely formal demonstrations. This alleged preference is attributed to the fact that in intuitive proofs assumptions can be made to "vary" one at a time, so that their "force" is made manifest very much as the "power" of a physical cause can be. Mathematical hypotheses thus acquire "causal" characteristics in "intuitive" proofs. A great many illustrations, interesting in their own right, are supplied to support this thesis. But I fail to see that M. Bouligand's thesis avoids the usual confusion between logical validity and the psychological correlates and genesis of mathematical reasoning.

ERNEST NAGEL

COLUMBIA UNIVERSITY

Discorsi di religione. Terza edizione riveduta. Per GIOVANNI GENTILE. Firenze, G. C. Sansoni, 1934. Pp. viii, 108.

In these discourses Gentile attempts to show the relation of politics, philosophy, and morals, to ethics. The first part, the political problem, is addressed to the youth of Italy, that they may see the identity of state and religion. The sacrifice of the individual to the ideal (as in the Risorgimento) and the devotion to the laws of the state are essentially religious. The argument of the second part reads: the life of man is spiritual, to live spiritually is to think, to think is to philosophize, philosophy is idealism, and idealism is religion. The last part contends that since idealism is essentially an ethics, the world is spiritual and moral.

SALVATORE RUSSO

AUBURN COLLEGIATE CENTER

La filosofia dell'arte in compendio. Per GIOVANNI GENTILE. Firenze, G. C. Sansoni, 1934. Pp. 182.

In this idealistic exposition esthetics is portrayed as one moment in the spiritual synthesis of philosophy. The beauty of art is a universal value for both the artist and spectator. We are able to discern works of art because we have an esthetic conscience as well as a moral one. The author rejects all the old distinctions between art and science, and the division of the arts into five or six, since this division, in his opinion, is based on an extrinsic consideration of art, that is, on technique. Hence there are as many arts as there are artistic creations.

SALVATORE RUSSO

AUBURN COLLEGIATE CENTER

The following books have been received:

On the Contented Life. By EDGAR A. SINGER. New York, Henry Holt and Company, 1936. Pp. x, 272.

The Self in Modern Thought. By RUPERT LODGE. Toronto, The University of Toronto Press, 1936. Pp. 583-604.

Psychotherapy. By JACQUES J. COHEN. London, John Bale, Sons & Danielson, Ltd., 1936. Pp. viii, 152.

The Critique of Poor Reason. By ARNOLD H. KAMIAT. New York, privately printed, 1936. Pp. vi, 144.

Auguste Comte and the United States (1813-1853). By RICHMOND L. HAWKINS. Harvard Studies in Romance Languages, II. Cambridge, Harvard University Press, 1936. Pp. xii, 148.

Aristotelis de caelo. Recognovit brevique adnotatione critica instruxit D. J. ALLAN. Oxford Classical Texts. New York, Oxford University Press, 1936. Pp. xii, 268a-313b.

Sensationalism and Theology in Berkeley's Philosophy. By INGEMAR HEDENIUS. Uppsala, Almquist & Wiksells Boktryckeri-A.-B., 1936. Pp. iv, 238. (British Agents: B. H. Blackwell, Ltd., Oxford.)

La jeunesse d'Auguste Comte et la formation du positivisme. Par HENRI GOUHIER. Paris, J. Vrin, 1936. Pp. viii, 388.

Essais. Par EMILE MEYERSON. Paris, J. Vrin, 1936. Pp. xvi, 274.

Nouveau traité de psychologie, V, 3: La croyance la psychologie de la raison. Par H. DELACROIX. Paris, Félix Alcan, 1936. Pp. iv, 185-304.

Nouveau traité de psychologie, V, 4: Le temps et les souvenirs le rêve et la rêverie. Par H. DELACROIX. Paris, Félix Alcan, 1936. Pp. iv, 305-404.

Unité et intelligibilité. Par ÉMILIE FISZER. Paris, J. Vrin, 1936. Pp. 246.

Valeur. Par GEORGES BÉNÉZÉ. Paris, J. Vrin, 1936. Pp. 64.

Allure du transcendental. Par GEORGES BÉNÉZÉ. Paris, J. Vrin, 1936. Pp. xxviii, 274.

Les hallucinations. Par PIERRE QUERCY. Paris, Félix Alcan, 1936. Pp. iv, 180.

L'imagination. Par J.-P. SARTRE. Paris, Félix Alcan, 1936. Pp. iv, 164.

L'analyste. Par GEORGE BERKELEY. Traduit de l'anglais per ANDRÉ LEROY. Paris, Les Presses Universitaires de France, 1936. Pp. xliv, 78.

Civilisation et synthèse. Par A.-H. FOROUGHI. Paris, Félix Alcan, 1936. Pp. viii, 92.

Poussières de physique. Par JEAN-JOSEPH VALLORY. Paris, Les Éditions Rieder, 1936. Pp. xvi, 392.

Une nouvelle encyclópedie médiévale: le compendium philosophiae. Par MICHEL DE BOÜARD. Paris, E. de Boccard, 1936. Pp. iv, 208.

Das Wesen der Schönheit. Von ROBERT HELLER. Wien, Wilhelm Braumüller, 1936. Pp. 40.

Goethes Faust und das Christentum. Von KARLERNST W. WEISSLEDER. Leipzig, S. Hirzel, 1936. Pp. xii, 40.

Metaphysik als Naturwissenschaft. Von CARL FRIES. Berlin, Emil Ebering, 1936. Pp. 80.

Die Geschichte der christlichen Philosophie. Von ETIENNE GILSON und PHILOTHEUS BÖHNER. Lieferung I. Die Geschichte der patristischen Philosophie. Paderborn, Ferdinand Schöningh, 1936. Pp. 240.

Der logische Gedanke von Kant bis Hegel. Von FRANZ HOLZHEIMER. Forschungen zur neueren philosophie und ihrer Geschichte herausgegeben von HANS MEYER, VIII. Paderborn, Ferdinand Schöningh, 1936. Pp. xiv, 248.

Rudolph IV. von Österreich. Bd. I. Von ERNST KARL WINTER. Wien, Reinhold, 1934. Pp. xvi, 410 and 24 plates.

Rudolph IV. von Österreich. Bd. II. Von ERNST KARL WINTER. Wien, Gsur & Co., 1936. Pp. xvi, 532 and 28 plates.

Der Typusbegriff im Lichte der neuen Logik. Von CARL G. HEMPEL und P. OPPENHEIM. Leiden, A. W. Sijthoff's Uitgeversmij N. V., 1936. Pp. viii, 130.

Critica dell'idealismo. Per CARMELO OTTAVIANO. Collezione di Studi Filosofici diretta da Carmelo Ottaviano. Serie Teoretica, 8. Napoli, Rondinella Alfredo, 1936. Pp. iv, 194.

NOTES

The American Council of Learned Societies is able to offer a limited number of small grants, ordinarily not exceeding $300, to individual scholars to assist them in carrying on definite projects of research, already commenced, in the humanistic sciences: philosophy, philology, literature and linguistics, art and musicology, archaeology, and cultural and intellectual history. Applicants must possess the doctorate or its equivalent, must be citizens or permanent residents of the United States or Canada, and must be in personal need of the assistance for which they apply and unable to secure it from other sources. Grants are not awarded for the fulfillment of requirements for any academic degree. Applications must be made in duplicate on special forms which will be supplied on request, and must be filed before January 15, 1937. For further information and for application-forms, address the Secretary for Fellowships and Grants, American Council of Learned Societies, 907 Fifteenth Street, N.W., Washington, D.C.

The Annual Science Exhibition meeting with the A.A.A.S. will be held this year in the Atlantic City Auditorium, December 28th to January 1st. This Exhibition is usually a leading attraction for the very numerous scientific groups that meet at the annual convocation. The progress of science is depicted at these exhibitions in an understandable manner and thus the various kinds of sciences are able to understand each other's work. The most distinguished scientists of America take part in these exhibitions and this year there are to be four Nobel Prize winners and others of international fame.

Mr. Paul S. Delp, for the past four years Assistant Professor of Philosophy and Psychology at Chapman College, has been promoted to Assistant Professor and Acting Head of the Department of Philosophy.

Dr. Karl Schlechta would be grateful to any owner of original Nietzsche letters if he would communicate with him at the Nietzsche-Archiv at Weimar.

The following is a list of articles in current philosophical periodicals:

MIND, XLV, 179: *R. F. A. Hoernlé,* Concerning "Reason" in Human Affairs; *F. C. S. Schiller,* Must Empiricism be Limited?; *J. L. Stocks,* What did Berkeley Mean by *Esse* is *Percipi?; Harold Jeffreys,* The Problem of Inference; *Ernest C. Mossner,* The Enigma of Hume; *M. B. Foster,* Mr. Joseph and the *Republic.*

PHILOSOPHY, XL, 43: *Gilbert Murray,* Vice and Illusion; *W. G. deBurgh,* Great Thinkers: (VIII) Spinoza; *J. L. Stocks,* Reason and Intuition; *M. B. Foster,* Some Implications of a Passage in Plato's *Republic; K. Henderson,* The Mind's Love for God; *Margaret Macdonald,* Russell and McTaggart.

THE MONIST, XLVI, 2: *Ledger Wood,* The Principles of Philosophical Criticism; *John Wright Buckham,* Duality and Dialectic; *Karl Britton,*

On Public Objects and Private Objects; *H. B. Loughnan,* Emergence and the Self; *Leo Abraham,* What is the Theory of Meaning About?; *Benjamin Ginzburg,* Mechanism and the Methodology of Science; *Oliver L. Reiser,* Modern Science and Non-Aristotelian Logic.

THE JOURNAL OF PHILOSOPHY, XXXIII, 13: *Albert G. A. Balz,* The Metaphysical Infidelities of Modern Psychology; Program and Abstracts of Papers Read at the Thirty-Seventh Annual Meeting of the Western Division of the American Philosophical Association, State University of Iowa, April, 1936. 14: *Waldo Jewell-Lapan,* Perception and Reality; *Clifford Barrett,* In What Sense are Values Objective?; *M. Whitcomb Hess,* A Note on Criteria. 15: *Harry Ruja,* The Logic of Logical Positivism; *A. P. Ushenko,* Prediction of Existence. 16: *John A. Clark,* A Definition of the Good; *M. Whitcomb Hess,* Is Free Speech a Right?

THE INTERNATIONAL JOURNAL OF ETHICS, XLVI, 4: *C. Delisle Burns,* War and Citizenship; *Edward Scribner Ames,* Liberalism in Religion; *Clifford Kirkpatrick,* The Measurement of Ethical Inconsistency in Marriage; *Dorothy Walsh,* Ethics and Metaphysics; *Susanne K. Langer,* On a Fallacy in "Scientific Fatalism"; *J. H. Muirhead,* Unionism and Separatism in Ethics; *Henry Lanz,* Metaphysics of Gossip; *Frank H. Knight,* On a Problem in Pure Aesthetics Raised by Professor Lasswell.

THE HIBBERT JOURNAL, XXXIV, 4: *Stephen Hobhouse,* "Ought We To Fight For Our Country in the Next War?": A Reply to Professor Broad; *L. P. Jacks,* A Demilitarised League of Nations; *W. R. Inge,* Gleanings From A Notebook; *W. G. Moore,* The Search for Erasmus; *J. A. Hobson,* Is Democracy An Empty Word?; *J. L. Stocks,* Philosophy of Democracy; *E. J. Russell,* Modern Conflicts of Practice and Ideals; *W. J. Blyton,* Sorcery and Witchcraft in Old Mexico; *F. C. S. Schiller,* Miss E. Sylvia Pankhurst and the Catholic Church; *E. H. Blakeney* and *C. J. Cadoux,* The Liberal-Modernist View of Jesus; *James Moffatt,* Survey of Recent Theological Literature.

THE JOURNAL OF RELIGION, XVI, 3: *William Ernest Hocking,* Meanings of Life; *Kemper Fullerton,* Some Problems of Liberal Protestantism in Historical Perspective; *Albert A. Jagnow,* Karl Barth and Wilhelm Herrmann; Pupil and Teacher; *Martin Rist,* Caesar or God (Mark 12: 13-17)?; A Study in Formgeschichte; *Clyo Jackson,* Joseph of Arimathea; *John Knox,* "Fourteen Years Later": A Note on the Pauline Chronology.

THE NEW SCHOLASTICISM, X, 3: *Edward A. Pace,* The Problem of Freedom; *Anthony John Halpin,* The Location of Qualitative Essence II. Locke and Meyerson; *Robert Leet Patterson,* The Argument from Motion in Aristotle and Aquinas; *John J. Toohey,* What Are the Predicables?; *Kurt F. Reinhardt,* The Spirit of Mediaeval Philosophy.

ANGLICAN THEOLOGICAL REVIEW, XVIII, 3: *William H. P. Hatch,* Jesus' Summary of the Law and the Achievement of the Moral Ideal According to St. Paul; *Cyril C. Richardson,* Cardinal Julian of the House of Cesarini; *Cornelia Geer LeBoutillier,* Is Death Frustration?; *Victor Lyle Dowdell,* An Aristotelian Theory of Prayer.

THE HARVARD THEOLOGICAL REVIEW, XXIX, 3: *James Bissett Pratt,* God and the Moral Law; *G. R. Driver,* Textual and Linguistic Problems of

the Book of Psalms; *Julius Seelye Bixler,* Josiah Royce—Twenty Years After.

SPECULUM, XI, 3: *G. Salvemini,* Florence in the Time of Dante; *A. K. Coomaraswamy,* Two Passages in Dante's *Paradiso; G. C. Homans,* Men and the Land in the Middle Ages; *K. W. Cameron,* A Discovery in *John de Mandevilles; F. J. Carmody,* Latin Sources in Brunetto Latini's World History; *Lynn Thorndike,* Alchemical Writings in Vatican Palatine and Other Continental Manuscripts; *L. W. Jones,* The Press-Mark of *Vienna 2133; T. F. Rich,* Giovanni da Sanminiato and Coluccio Salutati.

THE AUSTRALASIAN JOURNAL OF PSYCHOLOGY AND PHILOSOPHY, XIV, 2: *A. Boyce Gibson,* Social Psychology: A Philosophical Analysis; *A. Patkin,* Law as a Psychological Phenomenon (1); *J. A. Passmore,* Psycho-Analysis and Aesthetics; *Anthony M. Mardiros,* Determinism and its Ethical Implications.

PHILOSOPHY OF SCIENCE, III, 3: *Everett J. Nelson,* The Inductive Argument for an External World; *A. Cornelius Benjamin,* Outlines of an Empirical Theory of Meaning; *David I. Miller,* Purpose, Design and Physical Relativity; *O. O. Norris,* The Logic of Science and Technology; *Norbert Wiener,* The Rôle of the Observer; *William Gruen,* The Quest for a Lost Universe; *Joseph Mayer,* Pseudo-Scientific Economic Doctrine.

JOURNAL OF SOCIAL PHILOSOPHY, I, 4: *John Elof Boodin,* The Biological Basis of Society; *A. L. Kroeber,* So-Called Social Science; *Giorgio Del Vecchio,* Law and Economics; *Joseph Mayer,* Social Science Methodology; *William M. Balch,* Will the West Decline to Decline?

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